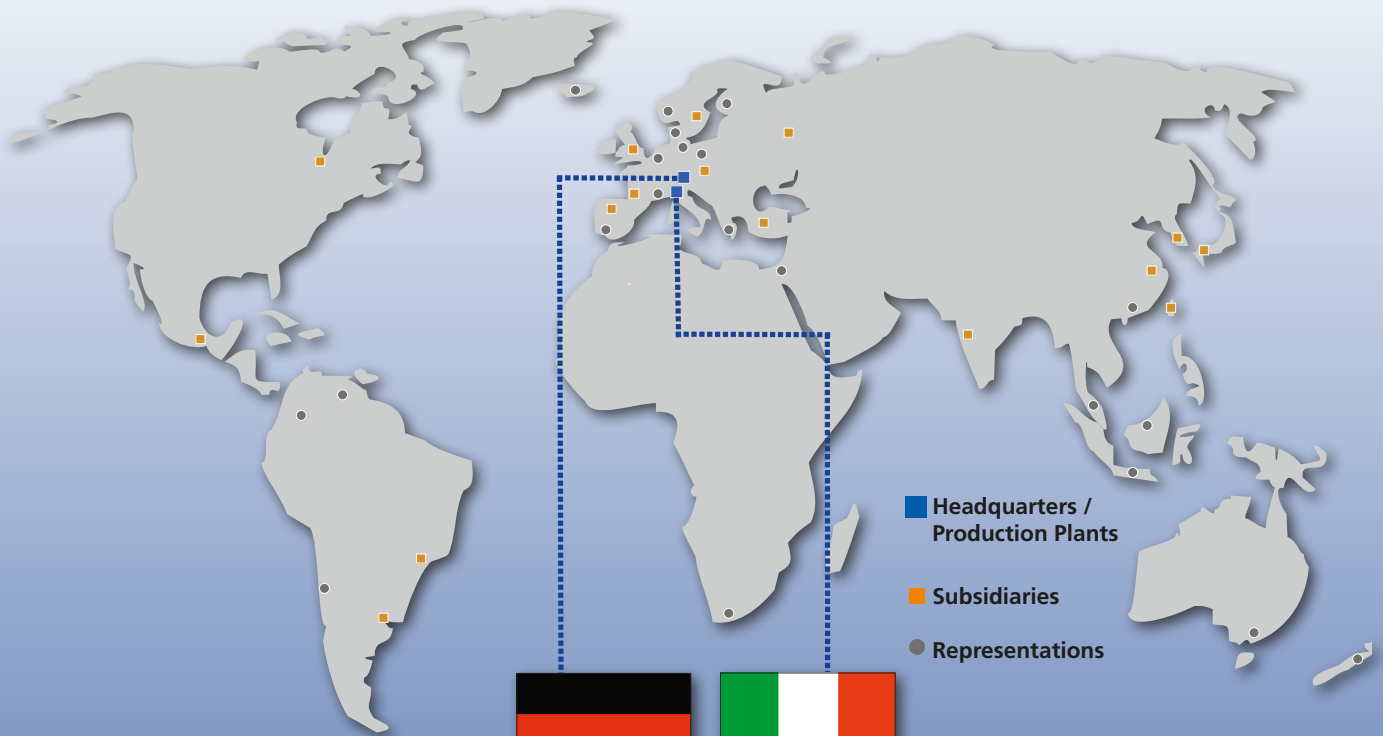


GRINDING 19 E

SMW-AUTOBLOK worldwide



SMW-AUTOBLOK manufacturing plant Meckenbeuren
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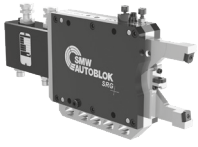


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Overview Grinding Applications



Chapter 1

Steady Rests

High precision grinding Steady Rests
Grinding diameter \varnothing 3 - 126 mm

- Fine adjustment of the grinding center
- Retractable arms
- Suitable for follow-down grinding
- High rigidity

Workpieces

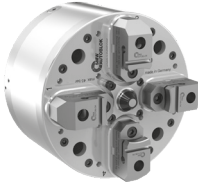
Cam shafts



Crank shafts



Rotor shafts
for e-motor



Chapter 2

Jaw chucks

High precision air chucks
Chuck sizes \varnothing 80 - 250 mm

- Centric and compensating clamping
- For OD and ID clamping
- Hydraulic or pneumatic actuation
- Proofline - fully sealed and low maintenance

Workpieces

Bearing rings
Bearing parts



Crank shafts



Rotor shafts
Cam shafts



Chapter 3

Diaphragm chucks

Diaphragm chucks
Chuck sizes \varnothing 160 - 400 mm

- Diaphragm technology for highest precision
- External or pitchline clamping
- With or without open center

Workpieces

Gears



Gear shafts



Chapter 4

Face drivers

High precision face drivers
for machining between center pins

- Machining of the entire surface of the workpiece with one single operation
- Power operated
- Highest run-out accuracy

Workpieces

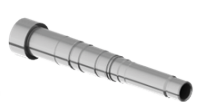
Cam shafts



Gear shafts



Rotor shafts
for e-motor



Chapter 5

Pancake cylinders

Pneumatic pancake cylinder for diaphragm chuck D-VARIO and face driver FDG

- Easy installation for grinding and turning machines without hydraulic unit
- Operating pressure 2-8 bar
- Medium feed for air / coolant



Chapter 6

I.D. Clamping

Segment sleeve mandrel
Clamping diameter \varnothing 18 - 105 mm

- For I.D. Clamping
- Very rigid design

Workpieces

Bearing rings
Bearing parts

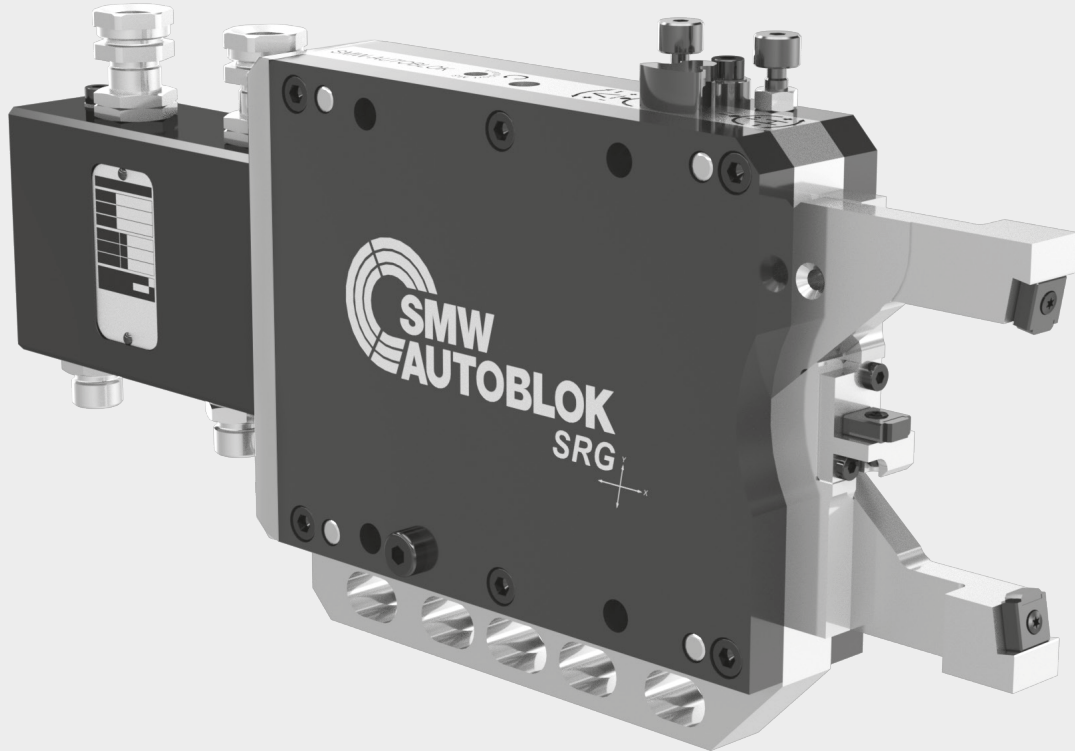


Gears



Motor housings





Steady Rests

High precision grinding Steady Rests
Grinding diameter \varnothing 3 - 126 mm

- Fine adjustment of the grinding center
- Retractable arms
- Suitable for follow down grinding
- High rigidity

- Fine adjustment of the center
- Retractable Steady Rest arms



Application/customer benefits

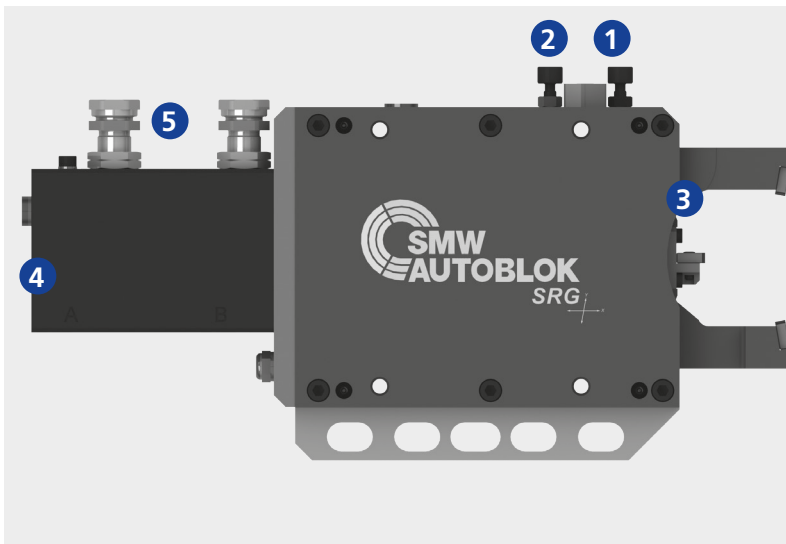
- Support of shaft type workpieces on grinding machines
- Particularly suitable for the machining of crankshafts and camshafts
- Rapid set up of the Steady Rest to the grinding center with the sensitive fine adjustment of the grinding center
- Suitable for follow down grinding
- Retractable Steady Rest arms for autoloading
- Monitoring of end positions for process safety

Standard equipment

Basic grinding Steady Rest SRG

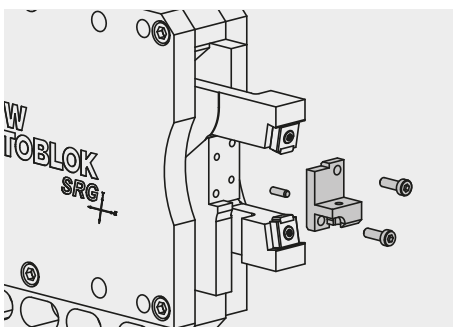
(Padholder for the middle piece, clamping kit and pad kits are not scope of delivery. For these parts please see the overview for the configurations below)

Technical details



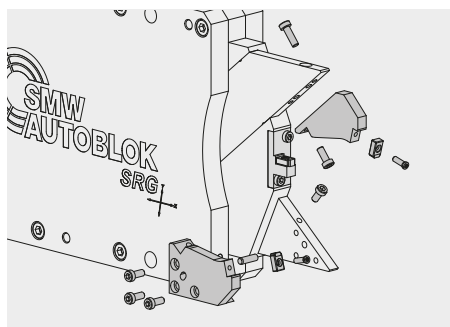
1. Horizontal fine adjustment of the grinding center.
2. Vertical fine adjustment of the grinding center.
3. Retractable Steady Rest arms.
4. Port for compressed air against dust and coolant.
5. Monitoring of end positions with proximity switches (switches not included).

Overview Configuration



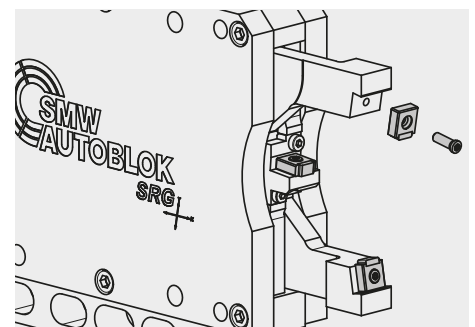
Select padholder for the middle piece*
(SRG 1, 1S, 2)

- Consisting of padholder middle piece (incl. mounting material).
- 3 versions available:
0 degree, ± 5 degree, ± 7 degree.
- Can be rotated by 180 degrees.



Select clamping kit**
(SRG 2F, 3F, 4F, 5F, 5.1FS | SRG-B 4F, 5F)

- Consisting of 2 nests for the arms and 1 padholder for the middle piece (incl. mounting material).
- The different clamping ranges can be covered with different clamping kits.



Select Pad kit***

- Consisting of 3 pads incl. 3 mounting screws.
- Standard for clamping range as shown on the Steady Rest.
- Special pad kit for shifting of the clamping range -5 mm available.

* Consisting of padholder for the middle piece incl. mounting material.

** Consisting of padholder for the middle piece and the nests for the arms incl. mounting material.

*** Consisting of 3 pads and 3 mounting bolts.

- Fine adjustment of the center
- Retractable Steady Rest arms

Overview clamping range

Type	Clamping range in mm															Page	
SRG 0.8	3 - 18															9	
SRG 1			20 - 35													10	
SRG 1 S			20 - 35													11	
SRG 2			30 - 60													12	
SRG 2 F																13	
I Kit	12 - 28																
II Kit			28 - 44														
III Kit					44 - 60												
SRG 3 F																14	
I Kit	10 - 30																
II Kit			30 - 50														
III Kit					50 - 70												
IV Kit							70 - 90										
SRG 4 F SRG 4.1 FS SRG-B 4 F																15-16	
I Kit			22 - 35														
II Kit					35 - 48												
III Kit							48 - 61										
IV Kit									61 - 74								
V Kit											74 - 87						
VI Kit													87 - 100				
SRG 5 F SRG-B 5 F																17-18	
I Kit					48 - 70												
II Kit							70 - 92										
III Kit									92 - 114								
IV Kit													114 - 136				
SRG 5.1 FS																19	
I Kit											96 - 102						
II Kit													102 - 108				
III Kit													108 - 114				
IV Kit													114 - 120				
V Kit													120 - 126				
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140		

SRG / SRG-B

Grinding Steady Rests

Ordering review

SMW-AUTOBLOK type Basic Steady Rest		SRG 0.8 223250	SRG 1 221175	SRG 1 S 223060	SRG 2 221871
Clamping range	mm	3-18	20-35	20-35	30-60
Padholder 0 degree*	Id. No.	-	203977	205191	203985
Padholder ± 5 degree*	Id. No.	-	203978	205196	203986
Padholder ± 7 degree*	Id. No.	-	203979	205197	203987
Pad Kit Standard	Id. No.	205439	203976	204161	203976
Pad Kit Special ***	Id. No.	-	203939	-	203939
Working pressure	bar	20-50	15-30	20-50	15-30
Follow down grinding		Yes	Yes	Yes	Yes
Dosing element kit	Id. No.	224379 (0.03 cm³)	224360 (0.1 cm³)	224379	224360

SMW-AUTOBLOK type Basic Steady Rest		SRG 2 F 222260			SRG 3 F 224450				SRG 4 F 221930				SRG-B 4 F 223140	
Clamping range	mm	12-60****			10-90****				22-100					
Clamping kit		I	II	III	I	II	III	IV	I	II	III	IV	V	VI
Clamping range	mm	12-28	28-44	44-60	10-30	30-50	50-70	70-90	22-35	35-48	48-61	61-74	74-87	87-100
Clamping kit 0 degree**	Id. No.	204383	204382	204381	224298	224297	224296	224295	205000	205001	205002	205003	205004	205005
Clamping kit ±2 degree**	Id. No.	-	-	-	-	-	-	-	205006	205007	205008	205009	205010	205011
Clamping kit ±3 degree**	Id. No.	-	-	-	-	-	-	-	-	-	-	-	-	-
Clamping kit ±5 degree**	Id. No.	206349	206348	206347	224302	224301	224300	224299	224453	224454	224455	224456	224457	224458
Clamping kit ±7 degree**	Id. No.	206346	206345	206344	224306	224305	224304	224303	224459	224460	224461	224462	224463	224464
Pad Kit Standard	Id. No.	203976			203976				204161					
Pad Kit Special***	Id. No.	203939			203939				-					
Working pressure	bar	15-30			10-30				7-25					
Follow down grinding		Yes			Yes				Yes					
Dosing element kit	Id. No.	224360			224360				-					

SMW-AUTOBLOK type Basic Steady Rest		SRG 4.1 FS 222410						SRG 5 F 223774				SRG-B 5 F 222530				SRG 5.1 FS 222665				
Clamping range	mm	22-100						48-136								96-126				
Clamping kit		I	II	III	IV	V	VI	I	II	III	IV	I	II	III	IV	V				
Clamping range	mm	22-35	35-48	48-61	61-74	74-87	87-100	48-70	70-92	92-114	114-136	96-102	102-108	108-114	114-120	120-126				
Clamping kit 0 degree**	Id. No.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Clamping kit ±2 degree**	Id. No.	204719	204720	204721	204722	204723	204724	205018	205019	205020	205021	-	-	-	-	-				
Clamping kit ±3 degree**	Id. No.	-	-	-	-	-	-	-	-	-	-	205200	205201	205202	205203	205204				
Clamping kit ±5 degree**	Id. No.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Clamping kit ±7 degree**	Id. No.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Pad Kit Standard	Id. No.	205228						204161				204161								
Pad Kit Special***	Id. No.	-						-				-								
Working pressure	bar	-						10-30				7-25								
Follow down grinding		Yes						Yes				Yes								

* Consisting of padholder for the middle piece incl. mounting material.

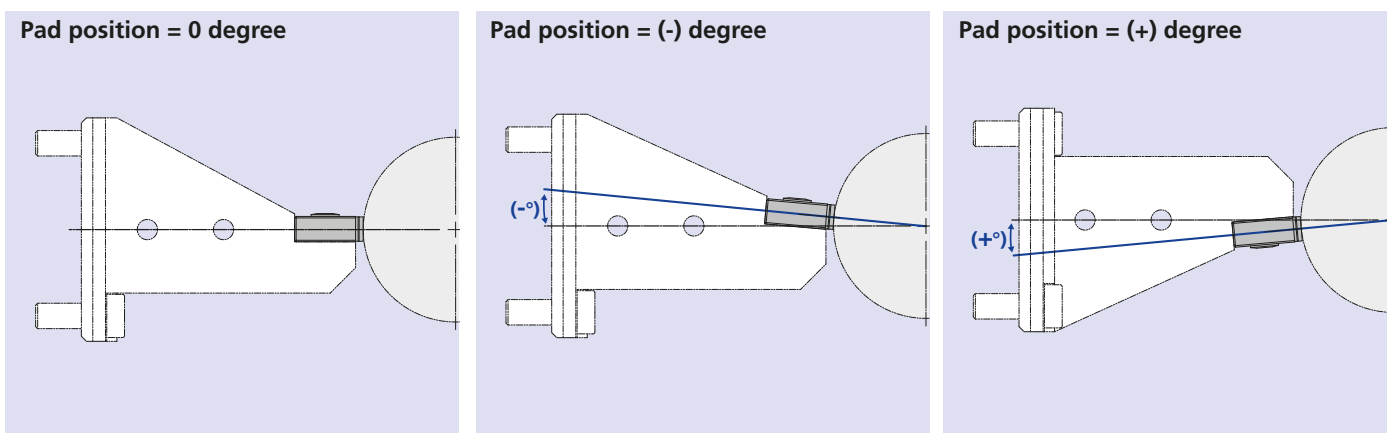
** Consisting of padholder for the middle piece and the nests for the arms incl. mounting material.

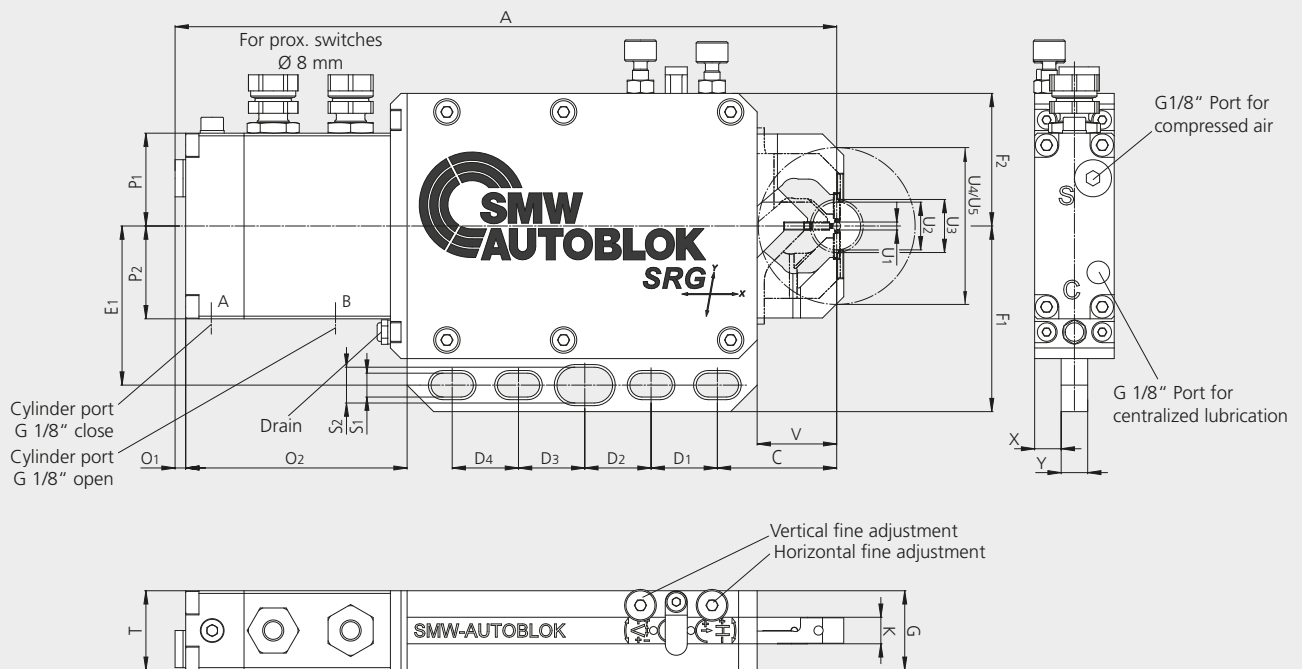
*** Clamping range -5 mm.

**** Padholder middle piece pivoting for contact angle.

SRG-B Side mounted cylinder.

Pad position middle piece / contact angle





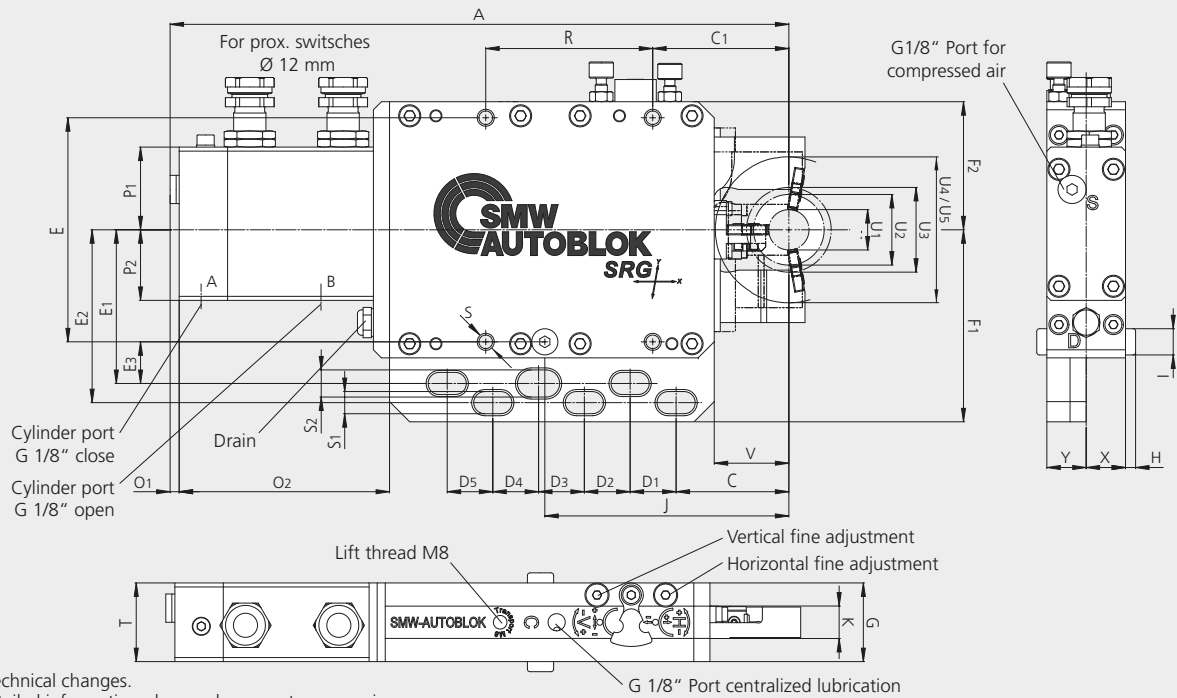
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For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 0.8
Id. No.			223250
Minimum clamping diameter	U1	mm	3
Maximum clamping diameter	U2	mm	18
Max. loading diameter (vertical, steady open)	U3	mm	58
Max. axial clearance diameter (steady open)	U4	mm	58
Max. swing diameter	U5	mm	58
Horizontal adjustment range		mm	±0.05
Vertical adjustment range		mm	±0.05
	A	mm	249.5
	C	mm	45
	D1	mm	25
	D2	mm	25
	D3	mm	25
	D4	mm	25
	E1	mm	60
	F1	mm	70
	F2	mm	50
	G	mm	30
	K	mm	10
	O1	mm	4
	O2	mm	83.5
	P1	mm	35
	P2	mm	35
	S1	mm	9 (4x)
	S2	mm	13.46 (1x)
	T	mm	30
	V	mm	30
	X	mm	10
	Y	mm	10
Cylinder stroke		mm	43
Piston area		cm ²	3.14
Operating pressure max.		bar	50
Working pressure		bar	20-50
Repeatability accuracy		mm	±0.001
Mass		kg	4.3

SRG 1

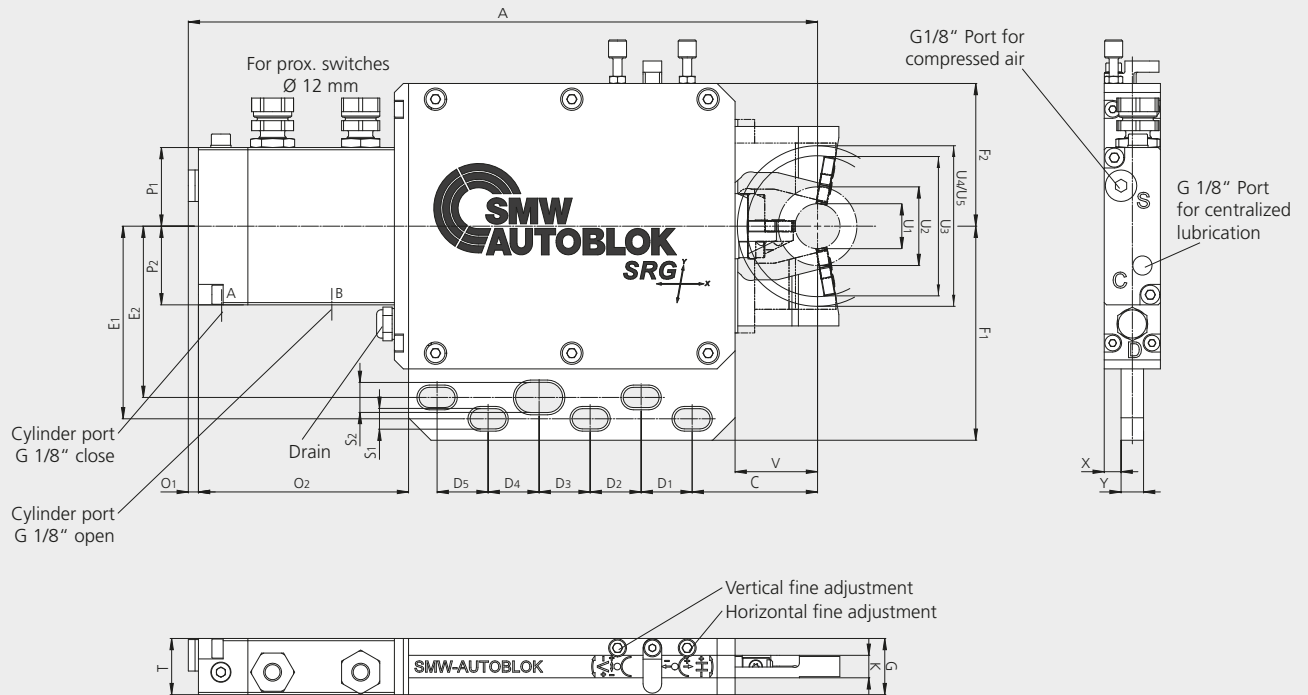
Grinding Steady Rests

Dimensions and technical data



Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type Id. No.			SRG 1 221175
Minimum clamping diameter	U1	mm	20
Maximum clamping diameter	U2	mm	35
Max. loading diameter (vertical, steady open)	U3	mm	72
Max. axial clearance diameter (steady open)	U4	mm	72
Max. swing diameter	U5	mm	72
Horizontal adjustment range		mm	±0.20
Vertical adjustment range		mm	±0.10
	A	mm	306.8
	C	mm	55.9
	C1	mm	67.5
	D1	mm	22.8
	D2	mm	22.7
	D3	mm	22.7
	D4	mm	22.7
	D5	mm	22.6
	E	mm	111.1
	E1	mm	76.2
	E2	mm	85.7
	E3	mm	20.65
	F1	mm	95.2
	F2	mm	63.5
	G	mm	39
	H	mm	5
	I	mm	13
	J	mm	121
	K	mm	16.1
	O1	mm	4.5
	O2	mm	104.3
	P1	mm	41
	P2	mm	35
	R	mm	82.8
	S	mm	M8 (4x)
	S1	mm	11 (5x)
	S2	mm	13.46 (1x)
	T	mm	39
	V	mm	37
	X	mm	19.5
	Y	mm	19.5
Cylinder stroke		mm	73.4
Piston area		cm ²	7.07
Operating pressure max.		bar	45
Working pressure		bar	15-30
Repeatability accuracy		mm	±0.001
Mass		kg	8.5



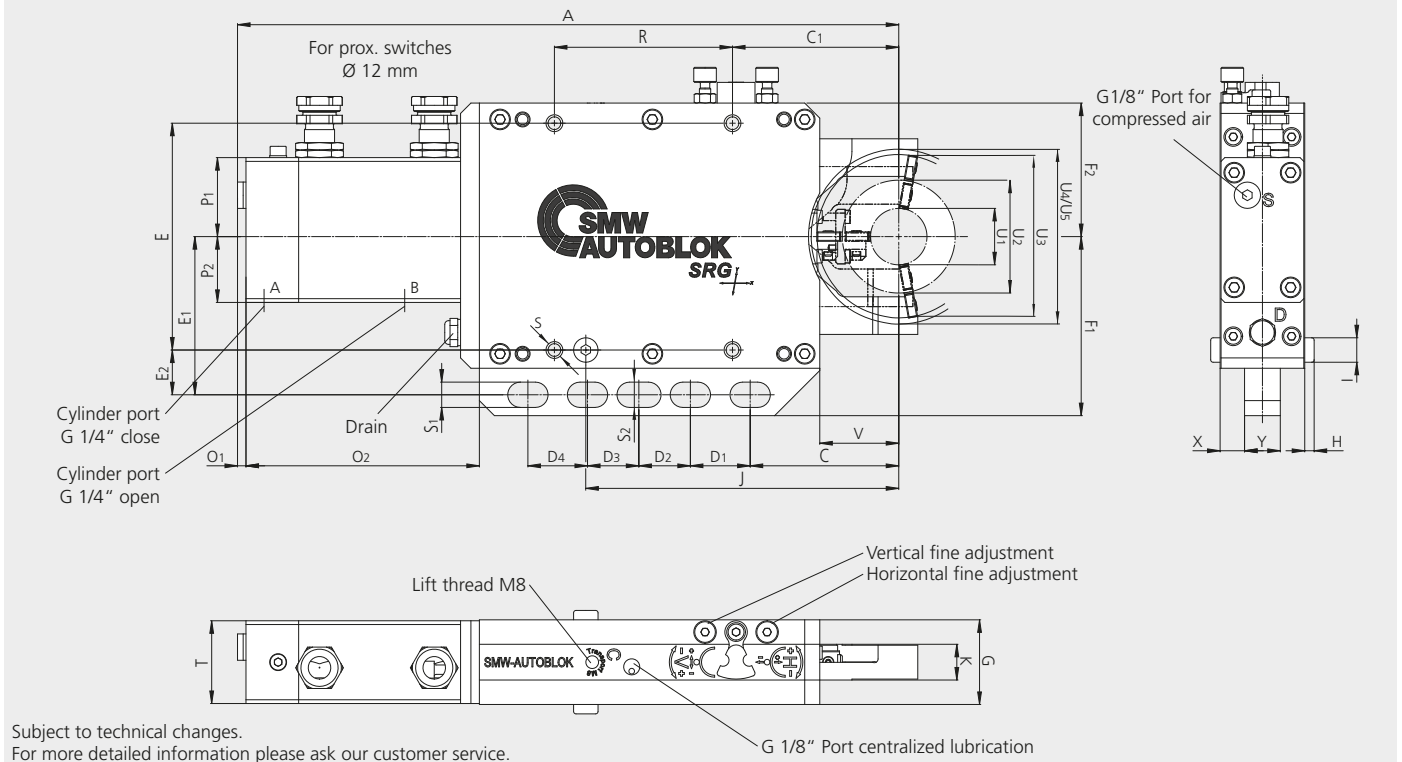
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type Id. No.			SRG 1 S 223060
Minimum clamping diameter	U1	mm	20
Maximum clamping diameter	U2	mm	35
Max. loading diameter (vertical, steady open)	U3	mm	62
Max. axial clearance diameter (steady open)	U4	mm	72
Max. swing diameter	U5	mm	72
Horizontal adjustment range		mm	±0.20
Vertical adjustment range		mm	±0.10
	A	mm	280
	C	mm	55.8
	D1	mm	22.7
	D2	mm	22.7
	D3	mm	22.7
	D4	mm	22.7
	D5	mm	22.7
	E1	mm	85.7
	E2	mm	76.2
	F1	mm	95.25
	F2	mm	63.5
	G	mm	25
	K	mm	10
	O1	mm	4.5
	O2	mm	93.5
	P1	mm	35
	P2	mm	35
	S1	mm	9 (5x)
	S2	mm	13.46 (1x)
	T	mm	25
	V	mm	36.7
	X	mm	7.5
	Y	mm	10
Cylinder stroke		mm	53
Piston area		cm ²	2.01
Operating pressure max.		bar	50
Working pressure		bar	20-50
Repeatability accuracy		mm	±0.001
Mass		kg	4.8

SRG 2

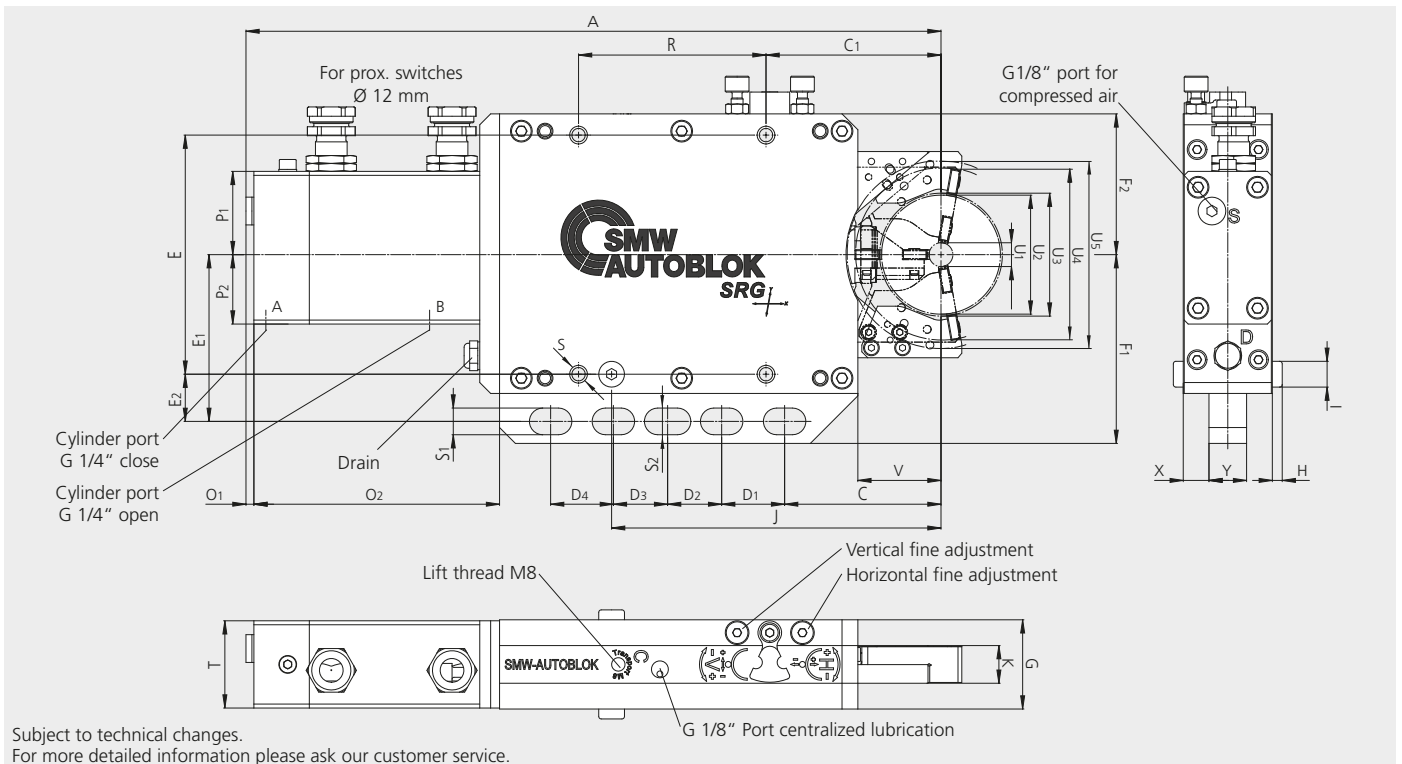
Grinding Steady Rests

Dimensions and technical data



Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type Id. No.			SRG 2 221871
Minimum clamping diameter	U1	mm	30
Maximum clamping diameter	U2	mm	60
Max. loading diameter (vertical, steady open)	U3	mm	82
Max. axial clearance diameter (steady open)	U4	mm	95
Max. swing diameter	U5	mm	95
Horizontal adjustment range		mm	±0.20
Vertical adjustment range		mm	±0.14
	A	mm	351.6
	C	mm	79
	C1	mm	88.4
	D1	mm	31.8
	D2	mm	27.4
	D3	mm	27.3
	D4	mm	31.7
	E	mm	120.6
	E1	mm	84.1
	E2	mm	23.8
	F1	mm	95.2
	F2	mm	71
	G	mm	45
	H	mm	5
	I	mm	13
	J	mm	166.4
	K	mm	19
	O1	mm	4.5
	O2	mm	124.1
	P1	mm	42
	P2	mm	35
	R	mm	94.7
	S	mm	M8 (4x)
	S1	mm	12.5 (4x)
	S2	mm	13.46 (1x)
	T	mm	44
	V	mm	42
	X	mm	13
	Y	mm	19
Cylinder stroke		mm	73.4
Piston area		cm ²	7.07
Operating pressure max.		bar	45
Working pressure		bar	15-30
Repeatability accuracy		mm	±0.001
Mass		kg	11.8



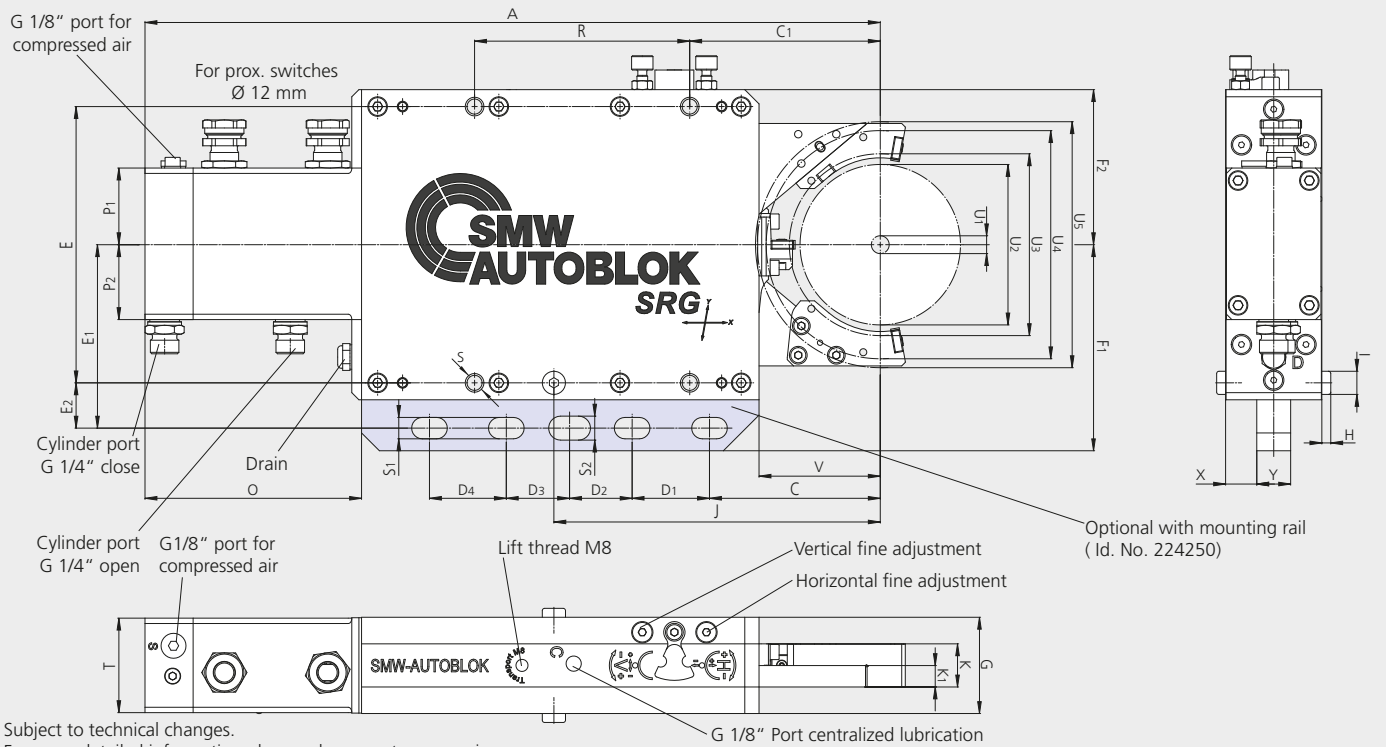
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 2 F		
Id. No.			222260		
Clamping kit			I	II	III
Minimum clamping diameter	U1	mm	12	28	44
Maximum clamping diameter	U2	mm	28	44	60
Max. loading diameter (vertical, steady open)	U3	mm	82	82	82
Max. axial clearance diameter (steady open)	U4	mm	94	94	94
Max. swing diameter	U5	mm		94	
Horizontal adjustment range		mm		±0.20	
Vertical adjustment range		mm		±0.14	
	A	mm		351.1	
	C	mm		79	
	C1	mm		88.4	
	D1	mm		31.8	
	D2	mm		27.3	
	D3	mm		27.4	
	D4	mm		31.7	
	E	mm		120.6	
	E1	mm		84.1	
	E2	mm		23.8	
	F1	mm		95.2	
	F2	mm		71	
	G	mm		45	
	H	mm		5	
	I	mm		13	
	J	mm		166.4	
	K	mm		19	
	O1	mm		4.5	
	O2	mm		124.1	
	P1	mm		42	
	P2	mm		35	
	R	mm		94.7	
	S	mm		M8 (4x)	
	S1	mm		12.5 (4x)	
	S2	mm		13.46 (1x)	
	T	mm		44	
	V	mm		42	
	X	mm		13	
	Y	mm		19	
Cylinder stroke		mm		66.4	
Piston area		cm ²		7.07	
Operating pressure max.		bar		45	
Working pressure		bar		15-30	
Repeatability accuracy		mm		±0.001	
Mass		kg		11.2	

SRG 3 F

Grinding Steady Rests

Dimensions and technical data



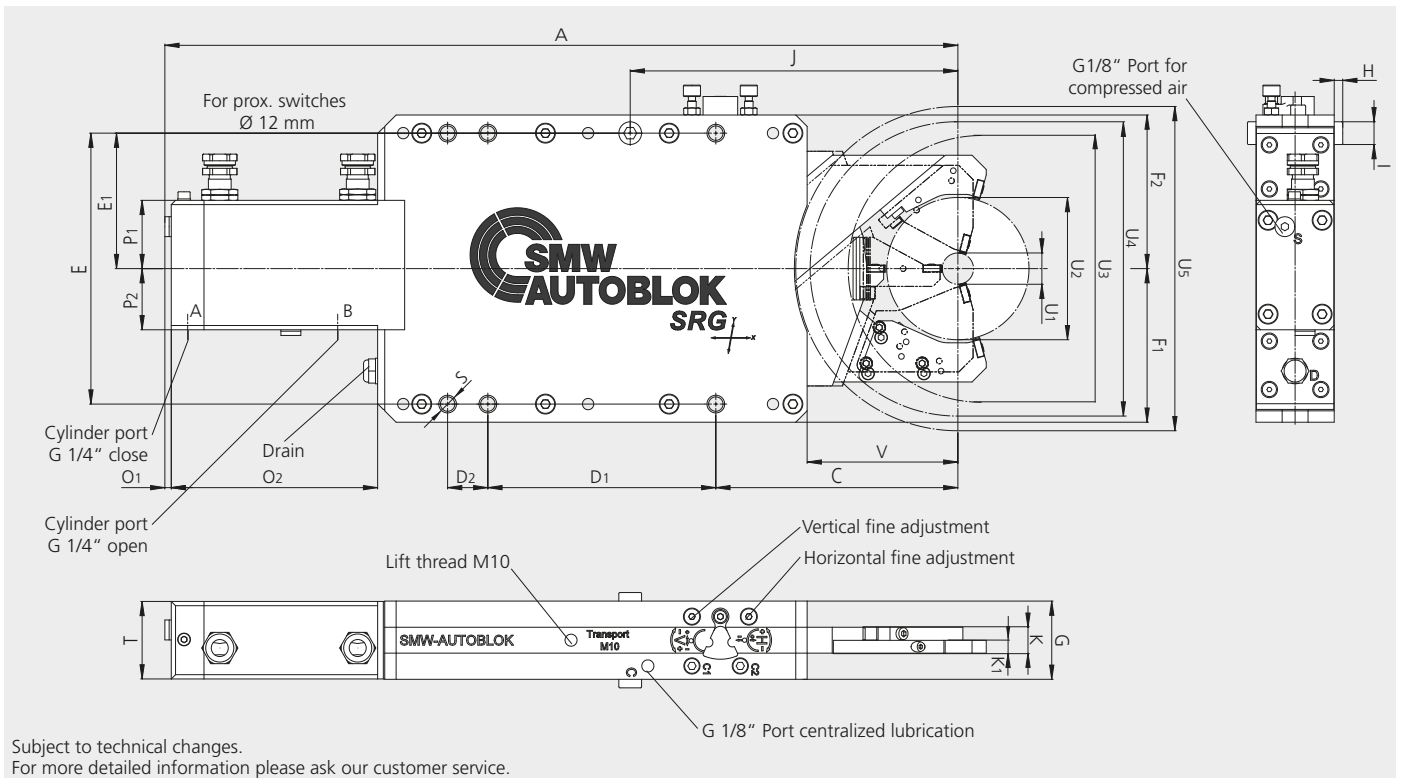
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 3 F			
Id. No.			224450			
Clamping kit			I	II	III	IV
Minimum clamping diameter	U1	mm	10	30	50	70
Maximum clamping diameter	U2	mm	30	50	70	90
Max. loading diameter (vertical, steady open)	U3	mm	111	110	106	102
Max. axial clearance diameter (steady open)	U4	mm	125	129	135	138
Max. swing diameter	U5	mm	138			
Horizontal adjustment range		mm	±0.20			
Vertical adjustment range		mm	±0.15			
	A	mm	412.5			
	C	mm	95.8			
	C1	mm	106.9			
	D1	mm	43.4			
	D2	mm	35.1			
	D3	mm	35.5			
	D4	mm	43.1			
	E	mm	155			
	E1	mm	102.9			
	E2	mm	25.4			
	F1	mm	115.6			
	F2	mm	87			
	G	mm	54			
	H	mm	5			
	I	mm	13			
	J	mm	183.1			
	K	mm	24			
	K1	mm	12			
	O	mm	121.5			
	P1	mm	43			
	P2	mm	42			
	R	mm	120.7			
	S	mm	M10 (4x)			
	S1	mm	13.46			
	S2	mm	13.46			
	T	mm	53			
	V	mm	68			
	X	mm	17.5			
	Y	mm	19			
Cylinder stroke		mm	79.8			
Piston area		cm ²	12.56			
Operating pressure max.		bar	45			
Working pressure		bar	10-30			
Repeatability accuracy		mm	±0.001			
Mass		kg	19.1			

SRG 4 F

Dimensions and technical data

Grinding Steady Rests



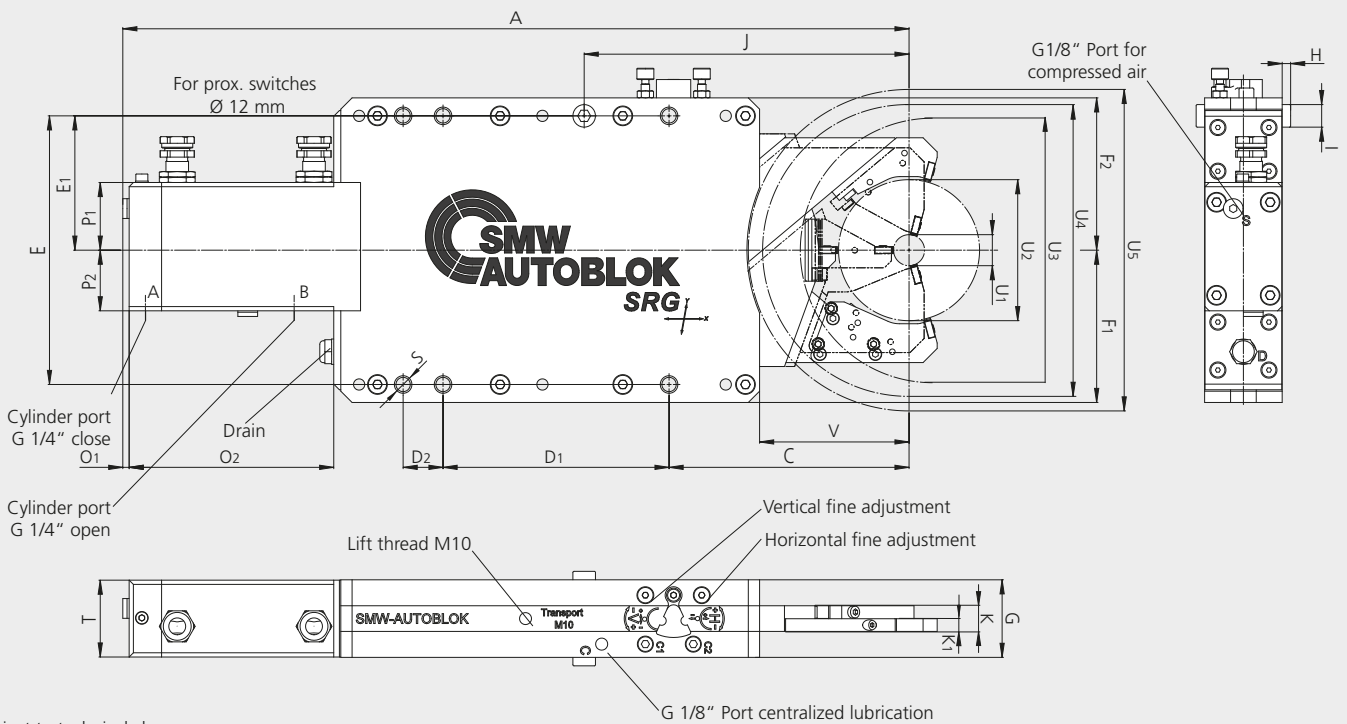
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 4 F					
Id. No.			221930					
Clamping kit			I	II	III	IV	V	VI
Minimum clamping diameter	U1	mm	22	35	48	61	74	87
Maximum clamping diameter	U2	mm	35	48	61	74	87	100
Max. loading diameter (vertical, steady open)	U3	mm	206	204	200	196	194	190
Max. axial clearance diameter (steady open)	U4	mm	218	219	219	220	222	224
Max. swing diameter	U5	mm	228					
Horizontal adjustment range		mm	±0.20					
Vertical adjustment range		mm	±0.14					
	A	mm	557.6					
	C	mm	170.2					
	D1	mm	160.3					
	D2	mm	28.3					
	E	mm	190.5					
	E1	mm	95.25					
	F1	mm	108					
	F2	mm	108					
	G	mm	55					
	H	mm	6					
	I	mm	16					
	J	mm	230.4					
	K	mm	18.2					
	K1	mm	9					
	O1	mm	4.5					
	O2	mm	145.1					
	P1	mm	48					
	P2	mm	43					
	S	mm	M12 (6x)					
	T	mm	54.5					
	V	mm	106					
Cylinder stroke		mm	127.2					
Piston area		cm ²	12.56					
Operating pressure max.		bar	30					
Working pressure		bar	7-25					
Repeatability accuracy		mm	±0.001					
Mass		kg	30					

SRG 4.1 FS

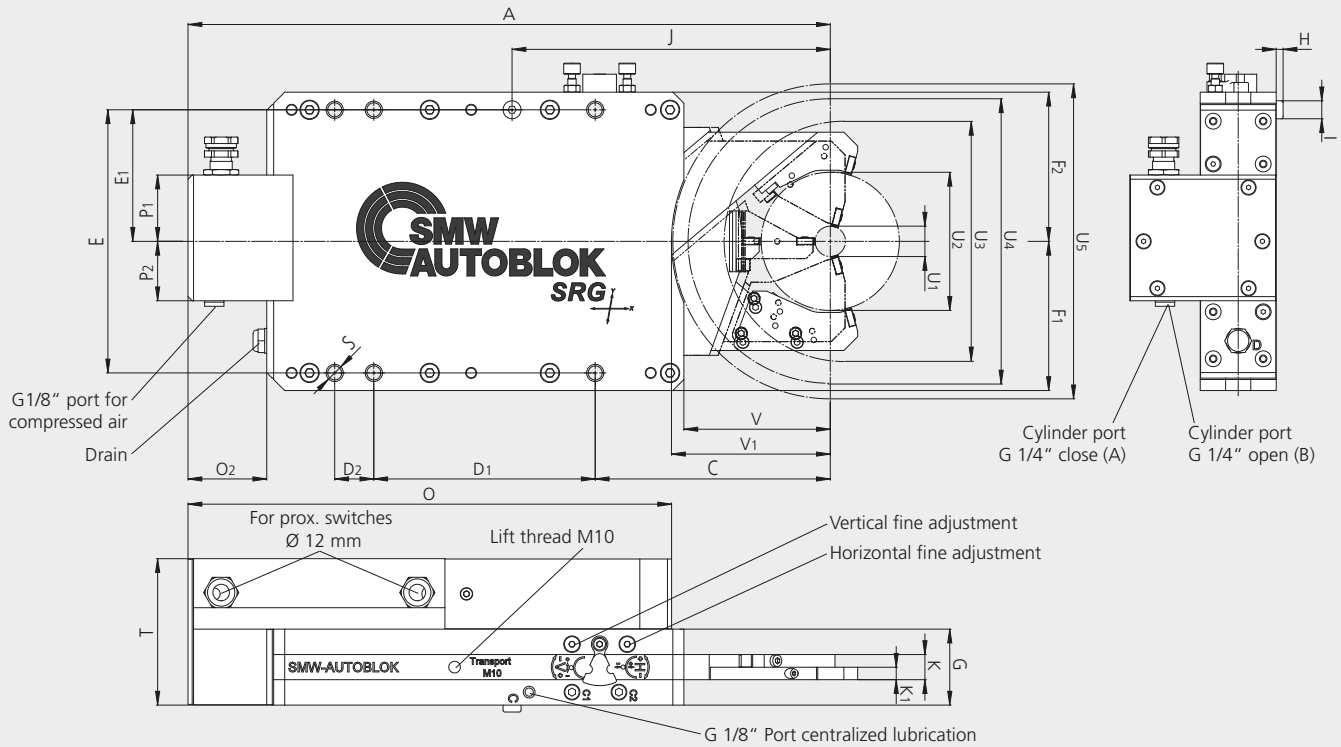
Grinding Steady Rests

Dimensions and technical data



Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 4.1 FS					
Id. No.			222410					
Clamping kit			I	II	III	IV	V	VI
Minimum clamping diameter	U1	mm	22	35	48	61	74	87
Maximum clamping diameter	U2	mm	35	48	61	74	87	100
Max. loading diameter (vertical, steady open)	U3	mm	206	201	197	195	190	189
Max. axial clearance diameter (steady open)	U4	mm	216	216	217	218	220	223
Max. swing diameter	U5	mm	250					
Horizontal adjustment range		mm	±0.22					
Vertical adjustment range		mm	±0.175					
	A	mm	565.5					
	C	mm	161.7					
	D1	mm	170.8					
	E	mm	190.5					
	E1	mm	95.25					
	F1	mm	108					
	F2	mm	108					
	G	mm	50.3					
	H	mm	6					
	I	mm	16					
	J	mm	230.8					
	K	mm	15.3					
	K1	mm	7.4					
	O1	mm	4.5					
	O2	mm	135					
	P1	mm	47					
	P2	mm	43					
	S	mm	M12 (6x)					
	T	mm	49.3					
	V	mm	114					
Piston area		cm ²	12.56					
Operating pressure max.		bar	35					
Working pressure		bar	8-28					
Repeatability accuracy		mm	±0.001					
Mass		kg	26.5					



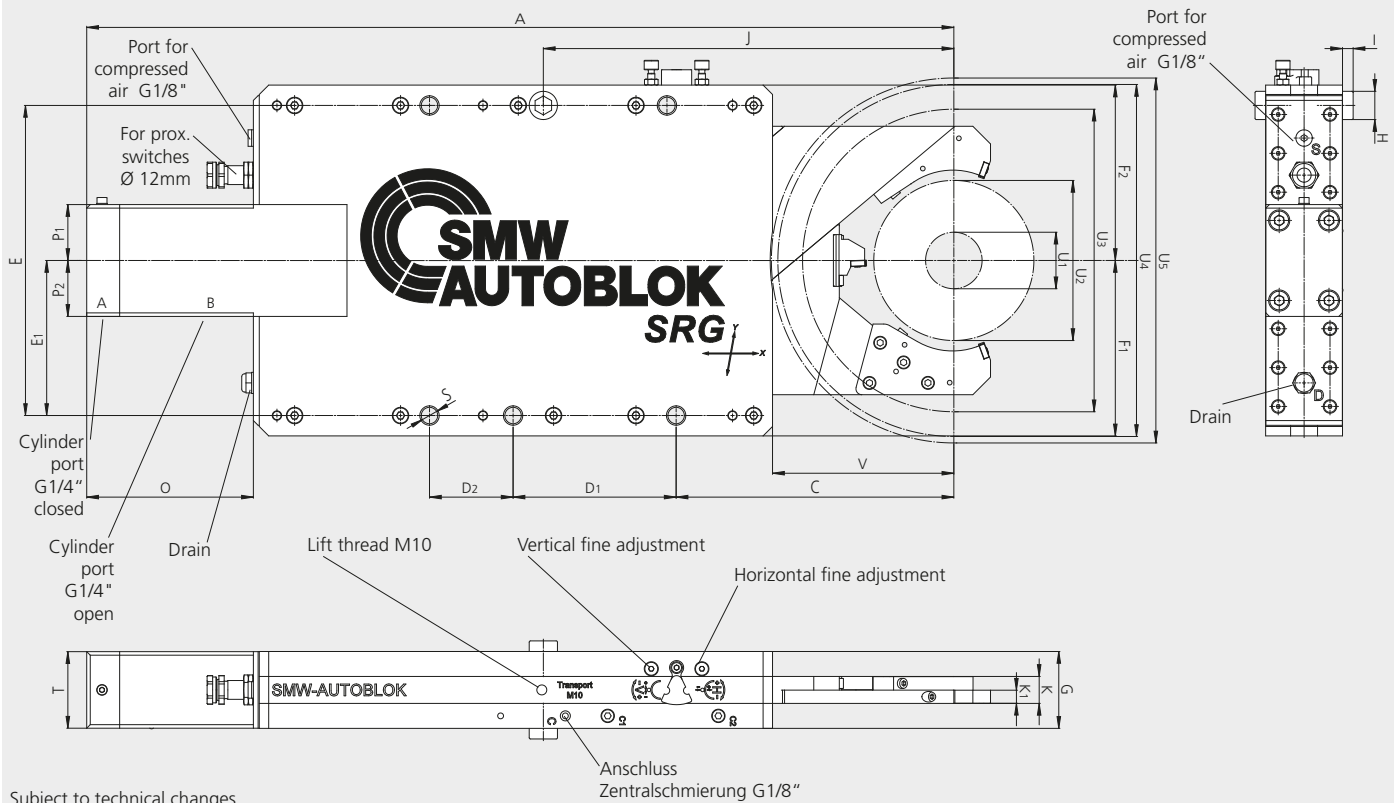
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type		SRG-B 4 F						
Id. No.		223140						
Clamping kit		I	II	III	IV	V	VI	
Minimum clamping diameter	U1	mm	22	35	48	61	74	87
Maximum clamping diameter	U2	mm	35	48	61	74	87	100
Max. loading diameter (vertical, steady open)	U3	mm	206	204	200	196	194	190
Max. axial clearance diameter (steady open)	U4	mm	218	218	218	220	222	224
Max. swing diameter	U5	mm	228					
Horizontal adjustment range		mm	±0.20					
Vertical adjustment range		mm	±0.14					
	A	mm	465					
	C	mm	170.2					
	D1	mm	160.3					
	D2	mm	28.3					
	E	mm	190.5					
	E1	mm	95.25					
	F1	mm	108					
	F2	mm	108					
	G	mm	55					
	H	mm	5					
	I	mm	13					
	J	mm	230.4					
	K	mm	18.2					
	K1	mm	9					
	O	mm	350.1					
	O2	mm	57					
	P1	mm	48					
	P2	mm	43					
	S	mm	M12 (6x)					
	T	mm	106					
	V	mm	106					
	V1	mm	115					
Cylinder stroke		mm	127.2					
Piston area		cm ²	10.02					
Operating pressure max.		bar	35					
Working pressure		bar	10-30					
Repeatability accuracy		mm	±0.001					
Mass		kg	37.8					

SRG 5 F

Grinding Steady Rests

Dimensions and technical data



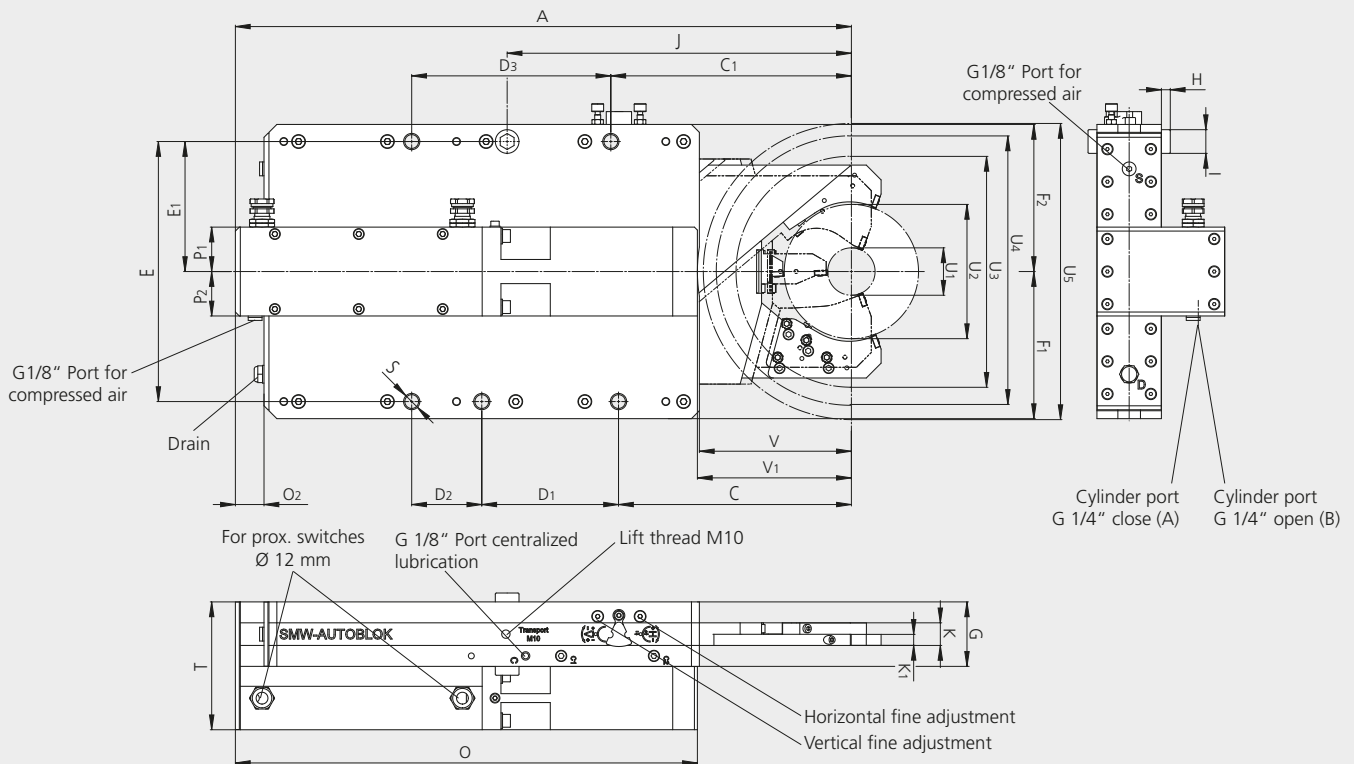
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 5 F			
Id. No.			223774			
Clamping kit			I	II	III	IV
Minimum clamping diameter	U1	mm	48	70	92	114
Maximum clamping diameter	U2	mm	70	92	114	136
Max. loading diameter (vertical, steady open)	U3	mm	273	267	263	257
Max. axial clearance diameter (steady open)	U4	mm	298	298	298	299
Max. swing diameter	U5	mm	310			
Horizontal adjustment range		mm	±0.20			
Vertical adjustment range		mm	±0.14			
	A	mm	736.6			
	C	mm	235.9			
	D1	mm	138.5			
	D2	mm	71			
	E	mm	263.4			
	E1	mm	131.7			
	F1	mm	149			
	F2	mm	149			
	G	mm	65.3			
	H	mm	24			
	I	mm	9			
	J	mm	348.7			
	K	mm	22.9			
	K1	mm	11.3			
	O	mm	141.6			
	P1	mm	47.5			
	P2	mm	47.5			
	S	mm	14			
	T	mm	65			
	V	mm	154			
Cylinder stroke		mm	179			
Piston area		cm ²	19.63			
Operating pressure max.		bar	30			
Working pressure		bar	7-25			
Repeatability accuracy		mm	±0.002			
Mass		kg	62.6			

SRG-B 5 F

Dimensions and technical data

Grinding Steady Rests



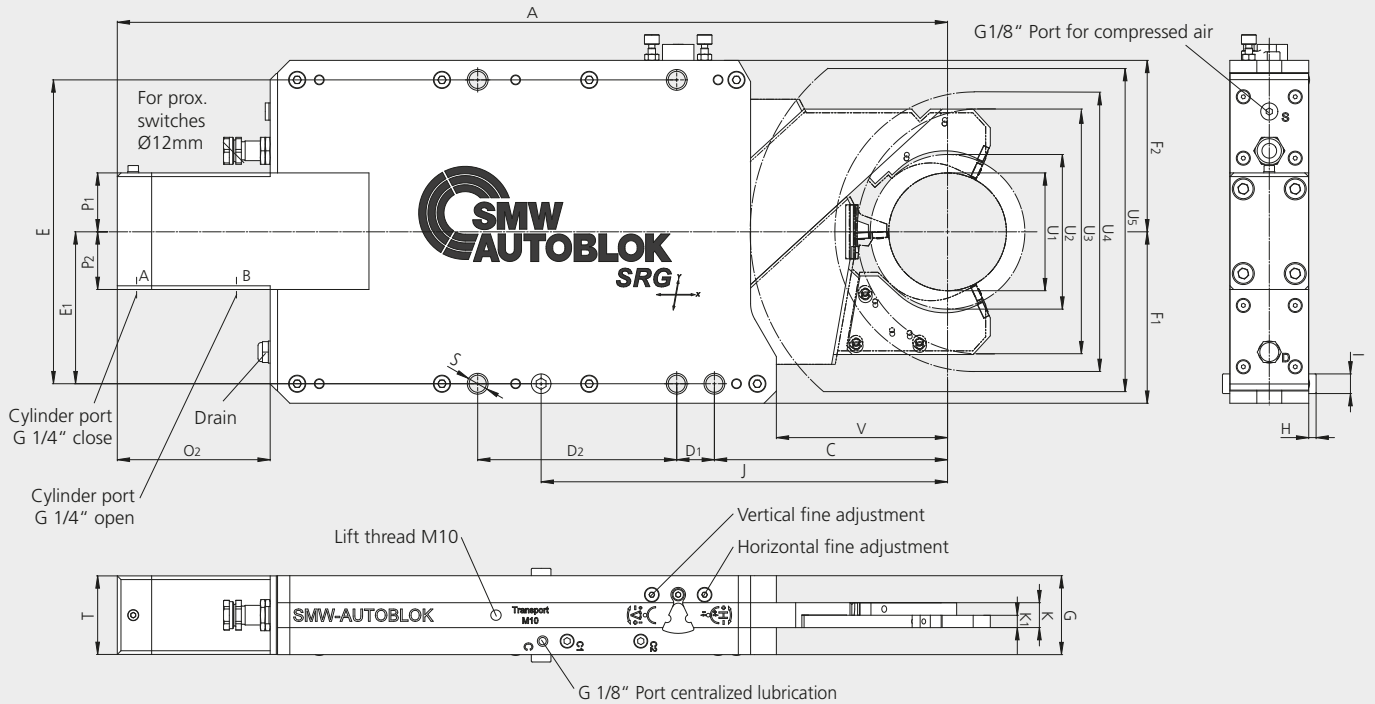
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG-B 5 F			
Id. No.			222530			
Clamping kit			I	II	III	IV
Minimum clamping diameter	U1	mm	48	70	92	114
Maximum clamping diameter	U2	mm	70	92	114	136
Max. loading diameter (vertical, steady open)	U3	mm	273	267	263	257
Max. axial clearance diameter (steady open)	U4	mm	298	298	298	299
Max. swing diameter	U5	mm	310			
Horizontal adjustment range		mm	± 0.20			
Vertical adjustment range		mm	± 0.14			
	A	mm	624			
	C	mm	235.9			
	C1	mm	243.7			
	D1	mm	138.5			
	D2	mm	71			
	D3	mm	201.7			
	E	mm	263.4			
	E1	mm	131.7			
	F1	mm	149			
	F2	mm	149			
	G	mm	65.3			
	H	mm	9			
	I	mm	24			
	J	mm	348.7			
	K	mm	22.9			
	K1	mm	11.1			
	O	mm	468			
	O2	mm	29			
	P1	mm	45			
	P2	mm	45			
	S	mm	M16 (5x)			
	T	mm	129.5			
	V	mm	154			
	V1	mm	156			
Cylinder stroke		mm	179			
Piston area		cm ²	16.49			
Operating pressure max.		bar	35			
Working pressure		bar	10-30			
Repeatability accuracy		mm	±0.002			
Mass		kg	76.4			

SRG 5.1 FS

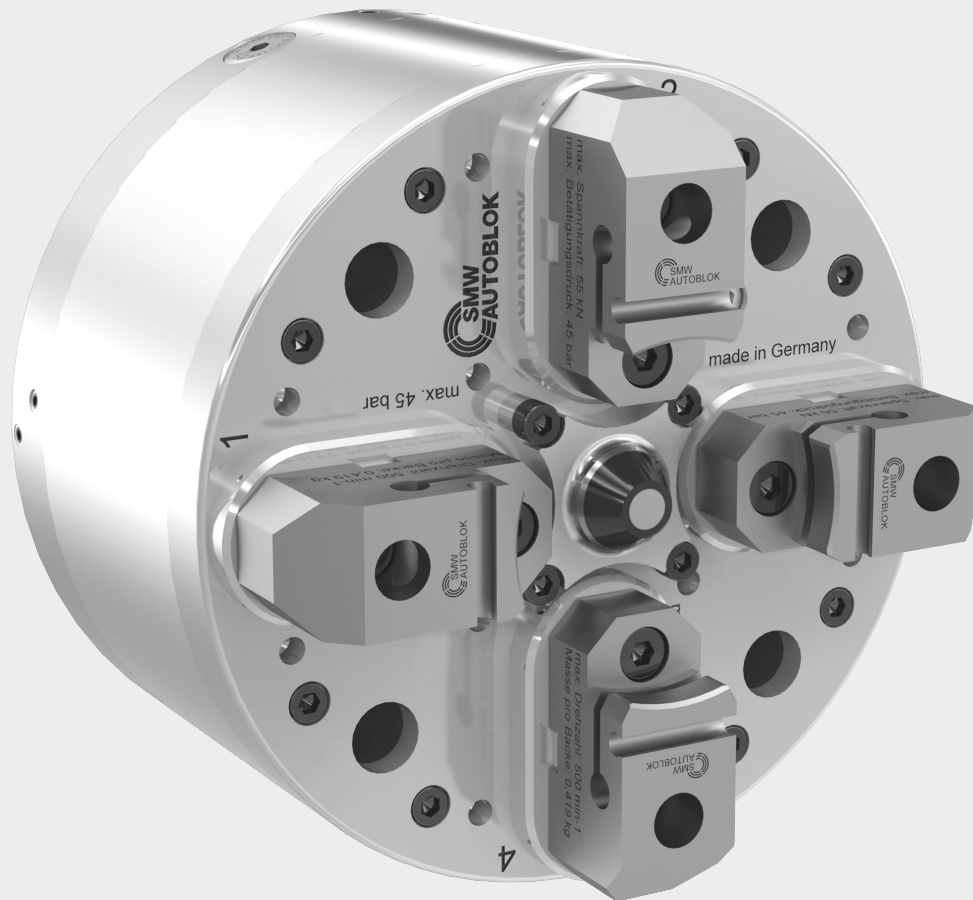
Grinding Steady Rests

Dimensions and technical data



Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type		SRG 5.1 FS				
Id. No.		222665				
Clamping kit		I	II	III	IV	V
Minimum clamping diameter	U1 mm	96	102	108	114	120
Maximum clamping diameter	U2 mm	102	108	114	120	126
Max. loading diameter (vertical, steady open)	U3 mm	236	234	232	229	228
Max. axial clearance diameter (steady open)	U4 mm	272	272	272	272	272
Max. swing diameter	U5 mm	320				
Horizontal adjustment range	mm	±0.22				
Vertical adjustment range	mm	±0.17				
	A mm	676.6				
	C mm	190				
	D1 mm	30.7				
	D2 mm	162.2				
	E mm	247.6				
	E1 mm	123.8				
	F1 mm	139.7				
	F2 mm	139.7				
	G mm	64.3				
	H mm	6				
	I mm	16				
	J mm	331.2				
	K mm	20.25				
	K1 mm	10				
	O2 mm	124.6				
	P1 mm	48				
	P2 mm	47				
	S mm	17 (5x)				
	T mm	64				
	V mm	139.5				
Cylinder stroke	mm	167.1				
Piston area	cm ²	19.63				
Operating pressure max.	bar	23				
Working pressure	bar	8-18.5				
Repeatability accuracy	mm	±0.002				
Mass	kg	54.8				



Jaw chucks

High precision air chucks

Chuck sizes Ø 80 - 250 mm

- Centric and compensating clamping
- For OD and ID clamping
- Hydraulic or pneumatic actuation
- Proofline - fully sealed and low maintenance

2+2 jaw compensating chuck

- 2+2 jaw hydraulic actuation
- Quick change center or adjustable
- For grinding
- Sealed and low maintenance

Application/customer benefits

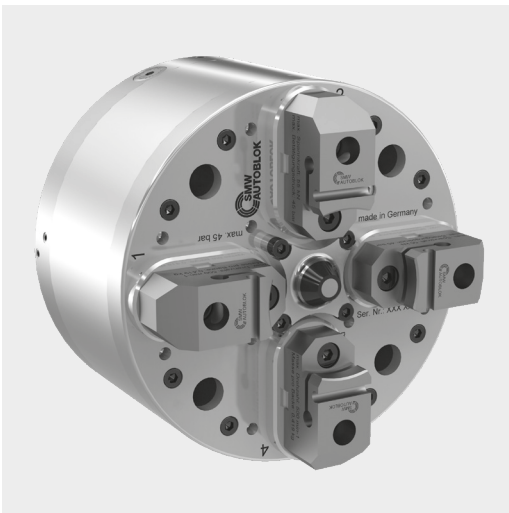
- For grinding of shafts

Technical features

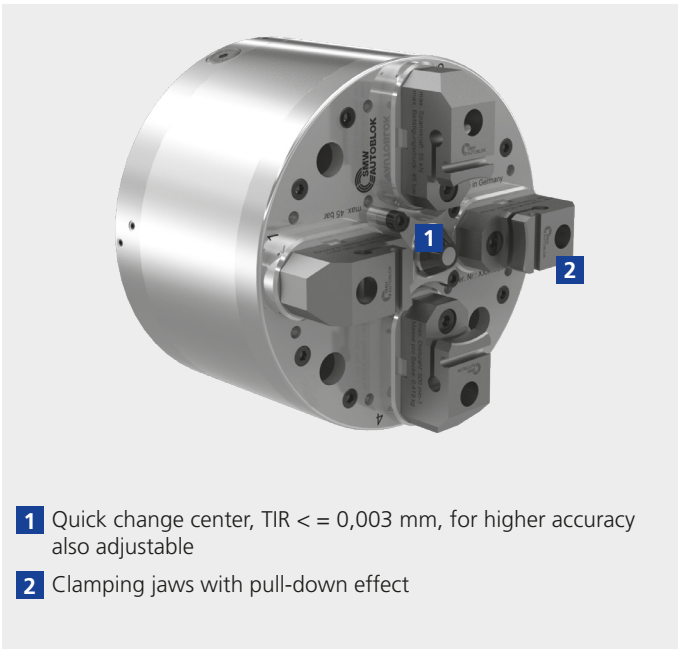
- 2+2 jaw hydraulic actuation
- Oil distribution via hydraulic manifold
- Quick change center or adjustable
- Sealed, oil bath lubricated and low maintenance

Standard equipment

2+2 jaw compensating chuck
without center, without top jaws

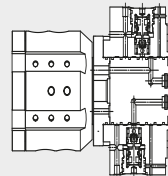


Product features



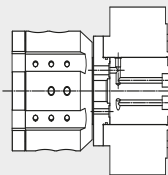
- 1** Quick change center, TIR $\leq 0,003\text{ mm}$, for higher accuracy also adjustable
- 2** Clamping jaws with pull-down effect

rotary distributor adaption versions



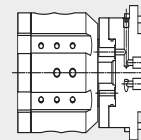
version 1:
Rotary distributor with flange
with safety valves

Id.-Nr. -046881-



version 2:
Rotary distributor with flange
two-pieced

Id.-Nr. -046880-

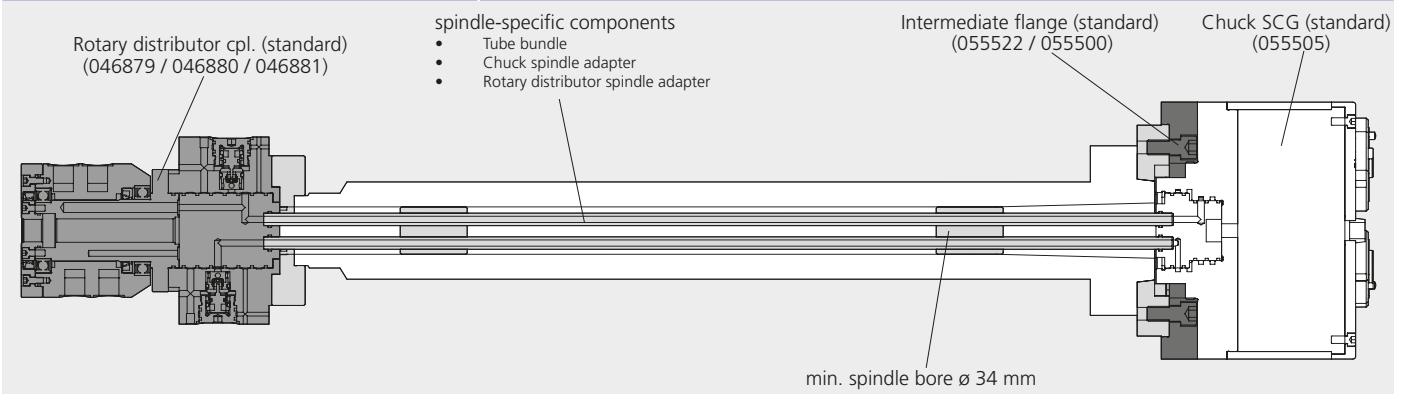


version 3:
Rotary distributor with flange
compact

Id.-Nr. -046879-

Ordering review

Type	Order number
Chuck	055505
Intermediate flange / intermediate flange adjustable	055522 / 055500
Rotary distributor cpl.	046879 / 046880 / 046881
spindle-specific components	tbd.

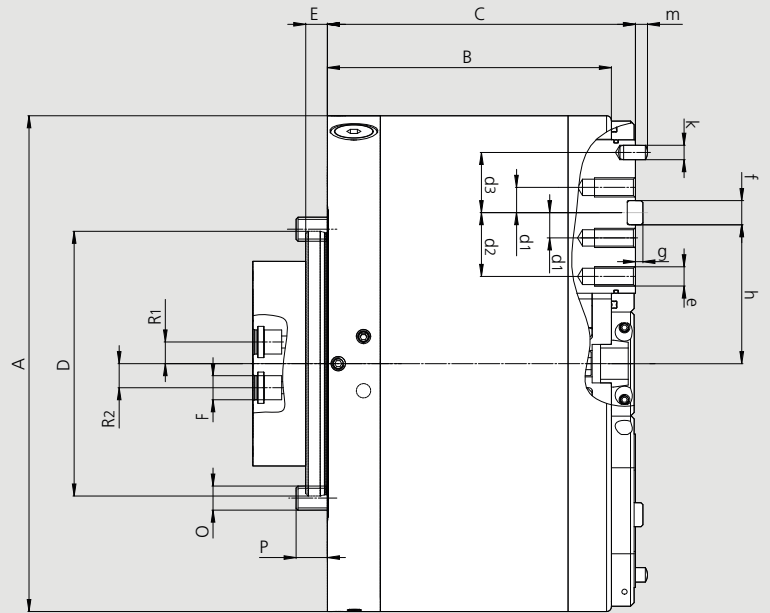
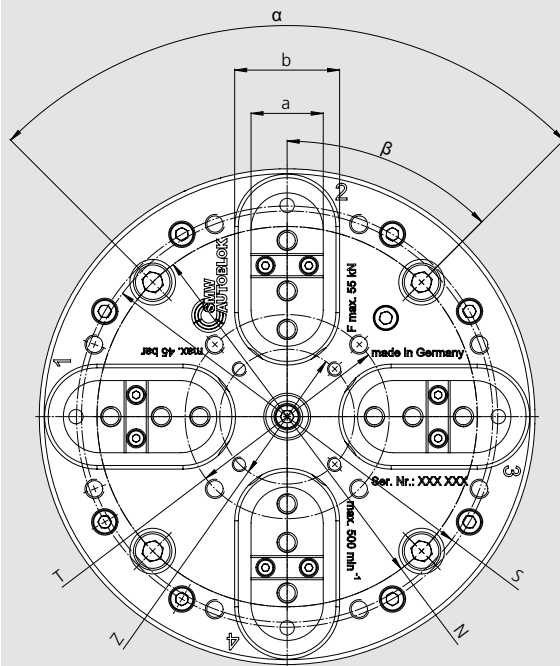


2+2 jaw compensating chuck

- 2+2 jaw hydraulic actuation
- Quick change center
- For grinding
- Sealed and low maintenance

SCG

2+2 jaw hydraulic actuation



Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type SCG		206	
Mounting	Size	Z110	
	A	mm	206
	B	mm	118
	C	mm	128
Centering	D	mm	110
	E	mm	9
Connection bore for tube bundle (dia. - depth - No.)	F	mm	Ø10 x 12mm - 4 x 90°
Fixing bolt circle	N	mm	158
Fixing bolt	O	mm	M10 (4x)
Min. thread engagement of the fixing bolt	P	mm	13
Bolt-circle for centerpoint (dia. - size - depth - No.)	Z	mm	Ø56 - M6 x 8 - 4 x 90°
Bolt-circle for tube bundle (3x) Radius	R1	mm	18
Bolt-circle for tube bundle (1x / clamping jaws 1+3) Radius	R2	mm	20
Bolt-circle (dia. - size - depth)	S	mm	Ø170.9 - M8 x 8
Bolt-circle (dia. - size - depth)	T	mm	Ø84.8 - M8 x 8
	a	mm	30
	b	mm	43.6
	d1	mm	10.5
	d2	mm	26.5
	d3	mm	25
Thread jaws (3x)	e	mm	M8 x 17
Notch	f h6	mm	10
	g	mm	3.1
Distance between notch and center of chuck (chuck opened)	h	mm	57.75
Pin	k h6	mm	6
	m	mm	5
	α	deg.	90
	β	deg.	45
Radial jaw stroke		mm	2
Pressure max.		bar	45
Gripping force max.		kN	55
Speed max.		r.p.m.	500
Weight (without top jaws)		kg	31
Moment of inertia		kg·m ²	0.22

- with built-in pneumatic actuating cylinder
- fully sealed



Application/customers benefits

- Sealed standard chuck for high-precision grinding
- Highest accuracy - runout and repeatability
- Built-in pneumatic actuation, no hydraulic cylinder required

Technical features

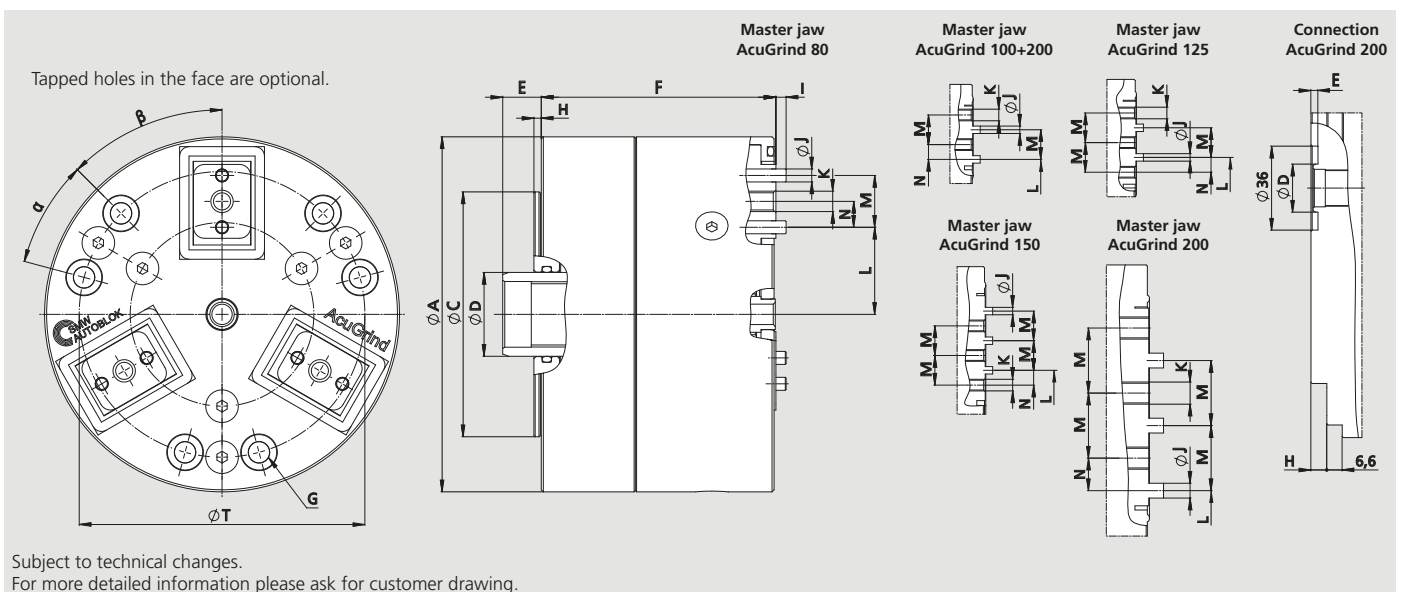
- Base jaws case hardened
- Repeatability < 0.002 mm
- **proofline® chucks** = fully sealed - low maintenance

Standard equipment

Power chuck
 Boring ring for I.D. clamping
 Boring ring for O.D. clamping
 Lubricating oil

Ordering example

AcuGrind 150, Id.No. 5302503

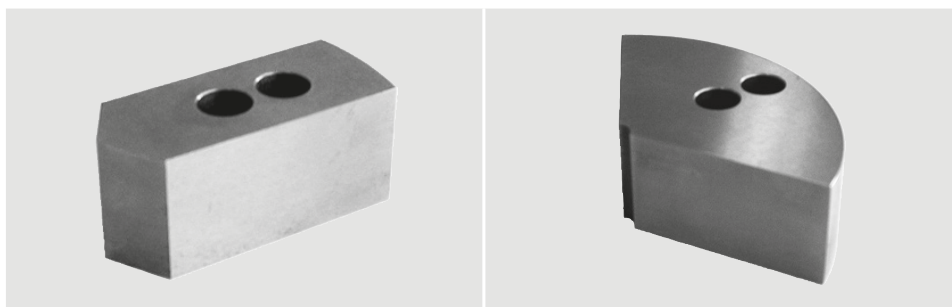


Technical data

SMW-AUTOBLOK Type		AcuGrind 80	AcuGrind 100	AcuGrind 125	AcuGrind 150	AcuGrind 200	AcuGrind 250
Order number	Id. No.	5302500	5302501	5302502	5302503	5302504	5302505
Outside Ø	A	87	107	135	157	214	265
Centering Ø	C	60	82.55	101.6	125	167.6	215.8
Distributor Ø	D	20.55	20.55	20.6	20.6	20.6	20.6
min. / max.	E	9.5 / 17.0	10 / 17.5	8 / 15.5	10.5 / 18	-3 / 10.5	12.75 / 20.25
Height	F	57.5	56.5	60.3	56.2	81.5	74.6
Chuck mounting bolts	G	6 x M5	6 x M5	6 x M6	6 x M6	6 x M10	6 x M10
	H	1.8	2	2.2	2.2	6.8	7.2
	I	2.5	3.2	3.2	3.2	6.35	6.35
Pin Ø	J	3.18	3.18	3.18	3.18	6.35	6.35
Jaw mounting bolts	K	M5	M5	M5	M5	3/8" - 24 UNF	3/8" - 24 UNF
Distance to 1. pin max. / min.	L	21.34 / 20.09	21.34 / 20.09	34.05 / 32.8	34.05 / 32.8	38.05 / 36.8	35.7 / 34.45
	M	12.7	12.7	12.7	12.7	27.9	27.9
	N	6.35	6.35	6.35	6.35	13.95	13.95
Bolt circle Ø	T	70	88.9	110	135.75	183	233.7
	α	30°	6 x 60°	6 x 60°	6 x 60°	6 x 60°	6 x 60°
	β	45°	30°	30°	30°	30°	30°
Repeatability	mm	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Radial jaw stroke	mm	1.25	1.25	1.25	1.25	1.25	1.25
Speed max.	min ⁻¹	1500	1000	900	900	900	800
Clamping force at 6 bar	kN	2.65	4.85	9.5	10.5	28	31
Operating pressure	bar	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6
Weight	kg	2.5	3.5	6.5	7.5	21	28

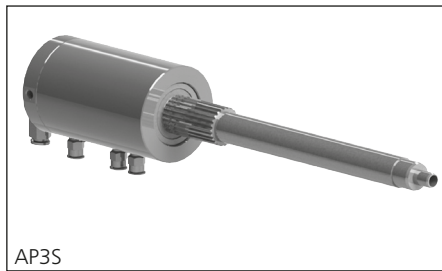
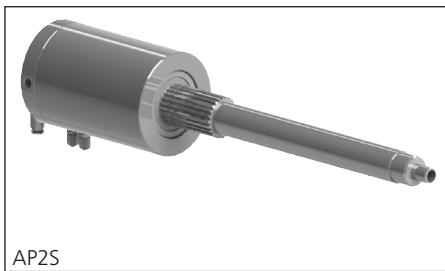
2-jaw and 4-jaw power chucks available on request.

Top jaws for AcuGrind



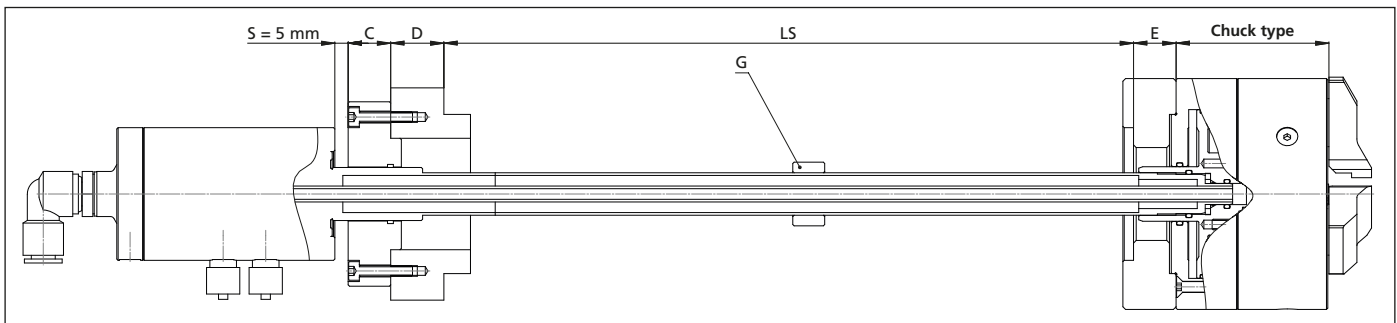
Chuck type	Material	WAK Soft top jaws		SBK Segment jaws 120°	
		Id. No.	Height	Id. No.	Height
AcuGrind 80	Aluminium	5302511	25	5302545	25
		5302512	38	5302546	38
	Steel	5302513	25	5302547	25
		5302514	38	5302548	38
AcuGrind 100	Aluminium	5302515	25	5302549	25
		5302516	38	5302550	50
				5302551	75
				5302552	100
	Steel	5302517	25	5302553	20
		5302518	38	5302554	38
5302519		50	5302555	50	
AcuGrind 125	Aluminium	5302520	25	5302556	25
		5302521	38	5302557	38
		5302522	50	5302558	50
		5302523	75	5302559	75
	Steel	5302524	25	5302560	20
		5302525	38	5302561	25
		5302526	50	5302562	38
				5302563	50
AcuGrind 150	Aluminium	5302527	25	5302564	25
		5302528	38	5302565	38
		5302529	50	5302566	50
		5302530	75	5302567	75
	Steel			5302568	100
		5302531	25	5302569	25
		5302532	38	5302570	38
		5302533	50	5302571	50
		5302534	75	5302572	75
AcuGrind 200	Aluminium	5302535	50	5302573	38
		5302536	75	5302574	50
		5302537	100	5302575	75
	Steel	5302538	50	5302576	50
		5302539	75	5302577	75
		5302540	100		
AcuGrind 250	Aluminium	5302541	50	5302578	75
		5302542	75	5302579	100
	Steel	5302543	50	5302580	75
		5302544	75	5302581	100

Top jaws in special version on request.



SMW-AUTOBLOK Type	Speed max. (min ⁻¹)	Version
AP2S	5.000	2 airways
AP3S	5.000	3 airways

AP2S/AP3S = with serration



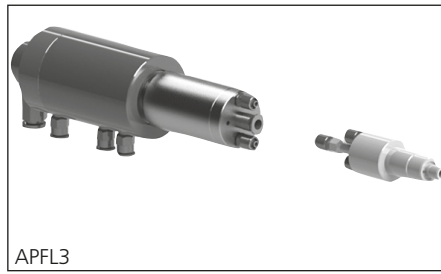
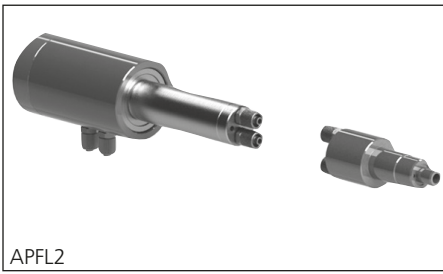
LS	Spindle length
E	Chuck adaptor
C	Bushing (included in scope of delivery of the air feed tubes type AP)
D	Adaptor (mounting ring manufactured by the customer)
S	Safety distance
F	AcuGrind chuck
G	Support ring for tube bundle longer 600mm

Ordering example

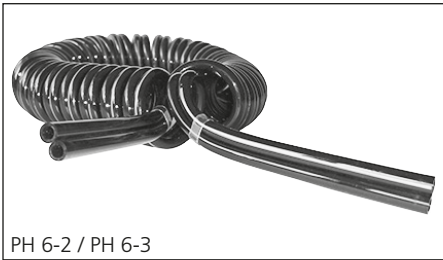
NOTE In case of an order of the air feed tubes type AP, the length of the air feed tube is necessary.

For calculating the correct length of the air feed tube (LR) are the following dimensions necessary: LS, E, C, D and the chuck type!

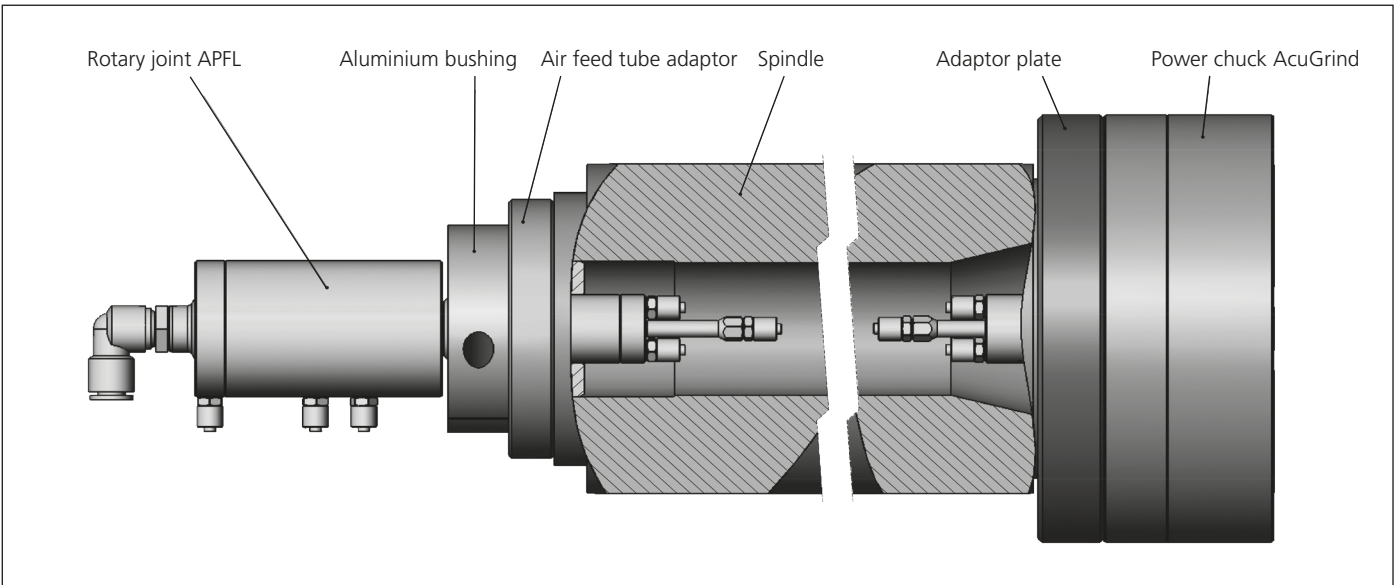
NOTE Use only with clean and oiled air.

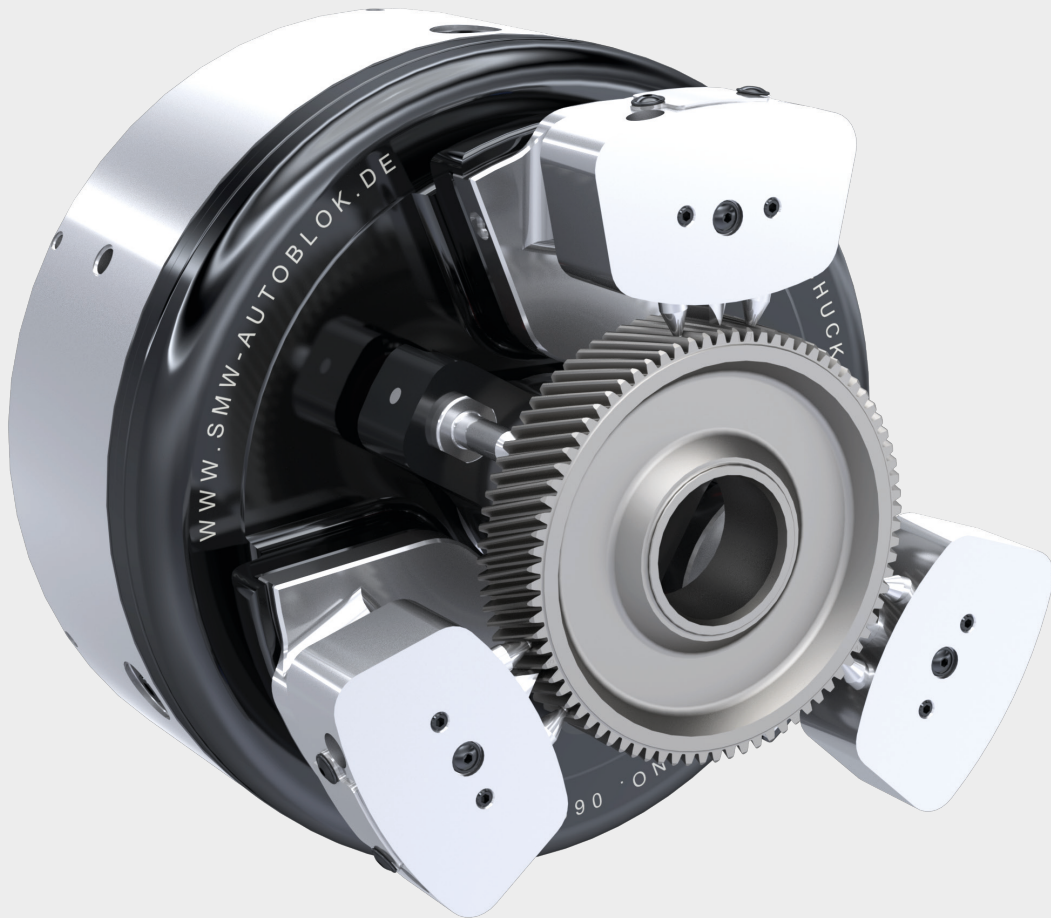


SMW-AUTOBLOK Type	Id. No.	Speed max. (min ⁻¹)	Version
APFL2	5302594	6.000	2 airways
APFL3	5302595	6.000	3 airways



SMW-AUTOBLOK Typ	PH 6-2	PH 6-3
Id.-Nr.	5302585	5302586
Number of airways	2	3
Airways outside Ø (mm)	6	6
Airways inside Ø (mm)	4	4
Medium	air	air
Max. operating pressure (MPa) at 20 °C	0.8	0.8
Operating temperature	-20 °C - +60 °C	-20 °C - +60 °C
Length (mm)	525	505
Max. working distance (mm)	1.500	1.000
Outside Ø coil (mm)	37	37
Material	Polyurethan	Polyurethan
Colour	black	black





Diaphragm chucks

Diaphragm chuck

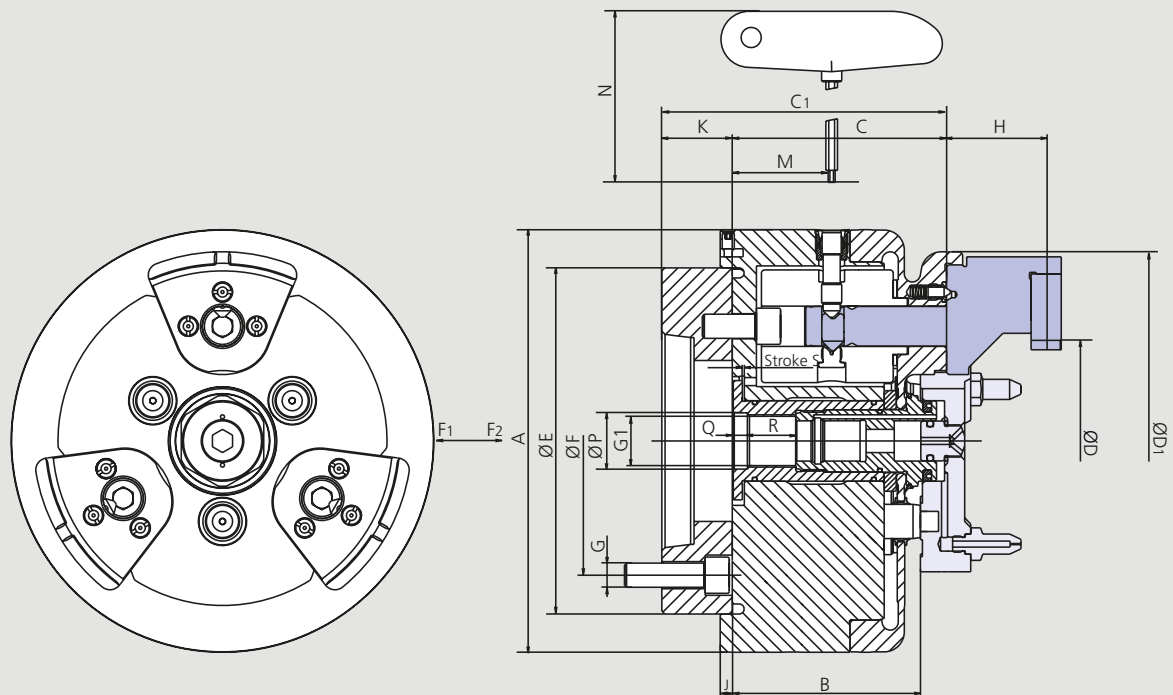
Chuck sizes Ø 160 - 400 mm

- Diaphragm technology for highest precision
- Pitch line clamping or O.D. clamping
- With or without open center

D

Diaphragm chuck QUICK JAW CHANGE SYSTEMS

Main dimensions and technical data



Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			D-160		D-210		D-260		D-315		D-400	
Mounting	Size		A5	A6	A5	A6	A6	A8	A8	A8	A8	A11
	A	mm	160		210		260		315		400	
	B	mm	79.5		93.5		108		111		118	
	C	mm	86.5		106.5		120		125		131	
	C1**	mm	116.5		146.5		156		173		181	
Clamping range min. / max.	D	mm	19-131		20-171		40-220		60-275		146-348	
	D1	mm	143		188		227		275		354	
	E	mm	130		172		225		275		350	
	F	mm	104.8	133.4	104.8	133.4	133.4	171.4	171.4	171.4	171.4	235
	G		M10	M12	M10	M12	M12	M16	M16	M16	M16	M20
	G1		M20 x 1.5		M26 x 1.5		M26 x 1.5		M30 x 1.5		M30 x 1.5	
Jaw height	H	mm	40.5		52		62		64		64	
	J	mm	6		6		6		6		6	
	K**	mm	30		40		48		48		50	
	M	mm	40.9		49.4		53		57		60.9	
	N	mm	185		185		185		185		185	
	P H8	mm	21		28		28		32		32	
	Q	mm	5.9		7		7		7		7	
	R	mm	22.3		24		24		29.5		34.5	
Piston stroke min. / max.	S	mm	0.9		1.0		1.5		1.7		1.5	
Jaw stroke at distance H			0.93		1.0		1.1		1.2		0.87	
Draw pull min. / max.*	F1	kN	0-10		0-25		0-25		0-25		6-25	
Draw push for chuck open	F2	kN	13		30		30		30		20	
Moment of inertia		kg·m ²	0.04		0.16		0.45		0.75		2.09	
Weight without top tooling		kg	11.6		30		44		60		104	
Recommended actuating cylinders	Type		SIN-DFR		SIN-DFR		SIN-DFR		SIN-DFR		SIN-DFR	

* Additional actuation force to the diaphragm spring clamping force applied by the clamping cylinder.

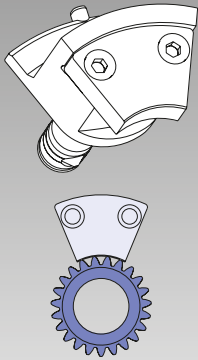
** Rec. dimensions, exact dimensions are depending on the machine.

Advice: The max. allowed speed for the application is permanently marked on the corresponding top jaws and must not be exceeded.

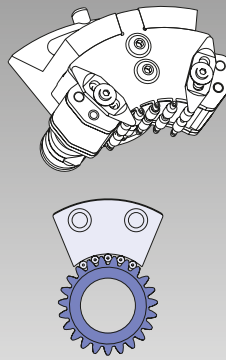
Advice: Please note, that it is important, that the cylinder force for pushing and pulling can be set to different values independently.

Important: Never rotate the chuck without inserted jaws, otherwise the centrifugal force compensation mechanism will get damaged.

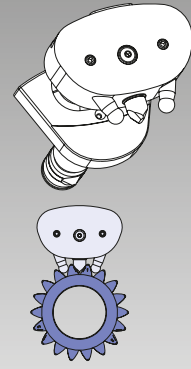
- Clamping jaws
- Closed center rotating cylinder
- Installation

Jaws**Type A**

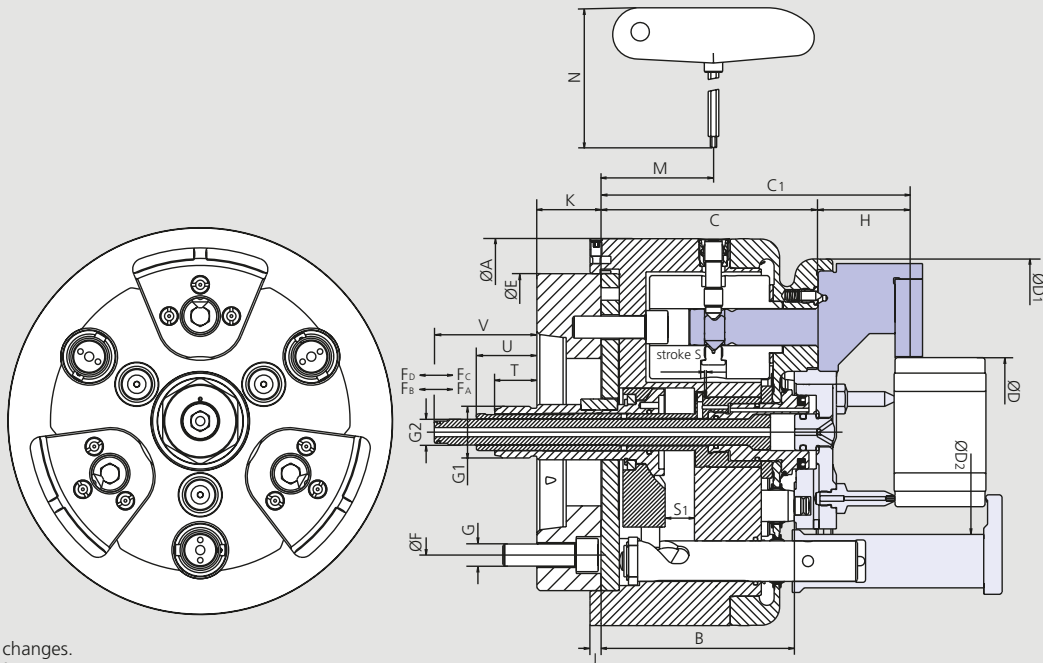
External clamping

Jaws**Type B**

Pitchline clamping with roller cage

Jaws**Type C**

Pitchline clamping with clamping pin



Subject to technical changes.
For more detailed information please ask our customer service.

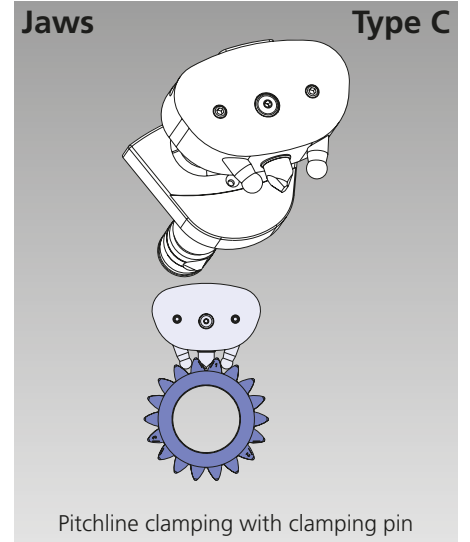
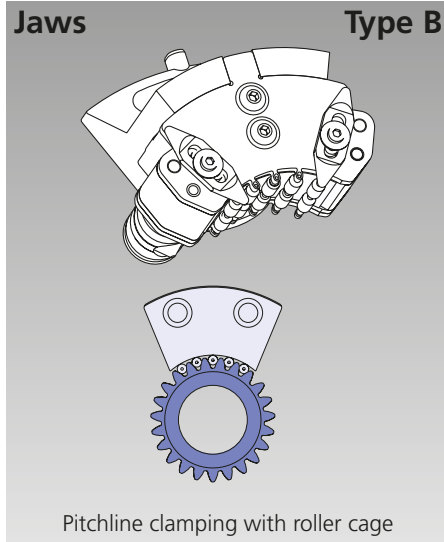
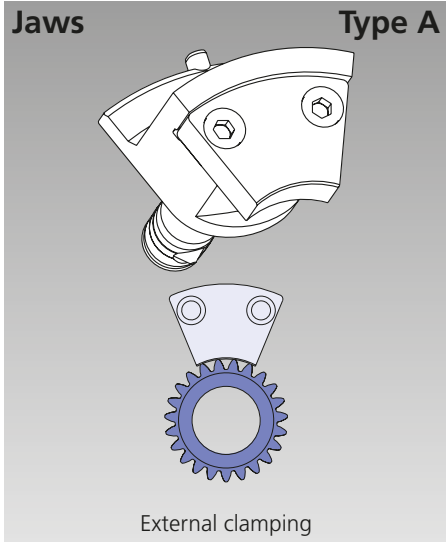
SMW-AUTOBLOK Type			D-210 KOMBI		D-260 KOMBI		D-315 KOMBI		D-400 KOMBI	
Mounting	Size		A5	A6	A6	A8	A8	A8	A8	A11
	A	mm	210		260		315		400	
	B	mm	105.5		111		116		123	
	C	mm	118.5		130		130		136	
	C1	mm	170.5		187		192		-	
Clamping range without fingers	D	mm	20-175		40-220		60-275		126-350	
	D1	mm	188		227		275		354	
Clamping range with fingers	D2	mm	111		153		203		268	
	E	mm	172		225		275		350	
	F	mm	104.8	133.4	133.4	171.4	171.4	171.4	235	
	G		M10	M12	M12	M16	M16	M16	M20	
	G1		M28 x 1.5		M28 x 1.5		M28 x 1.5		M28 x 1.5	
	G2		M14 x 1.0		M14 x 1.0		M14 x 1.0		M14 x 1.0	
Jaw height	H	mm	52		62		64		-	
	J	mm	6		6		6		6	
	K	mm	40		48		48		50	
	M	mm	61.4		61.9		61.9		66.5	
	N	mm	185		185		185		185	
Piston stroke	S	mm	1.0		1.5		1.5		1.5	
Axial stroke swing clamps	S1	mm	16		16		16		16	
	T	mm	18		10		10		8	
	U	mm	28		20		20		18	
	V	mm	51		43		43		41	
Jaw stroke at distance H		mm	1.0		1.1		1.2		0.87	
Draw pull min. / max.*	FD	kN	0-25		0-25		0-25		0-25	
Draw push for chuck open	FC	kN	20		20		20		20	
Draw pull swing clamps max.	FB	kN	6		9		9		18	
Draw push swing clamps open	FA	kN	2		2		2		2	
Moment of inertia		kg·m ²	0.16		0.45		0.75		2.26	
Weight without top tooling		kg	30		44		60		109	
Recommended actuating cylinder	Type		ZHVD-DFR		ZHVD-DFR		ZHVD-DFR		ZHVD-DFR	

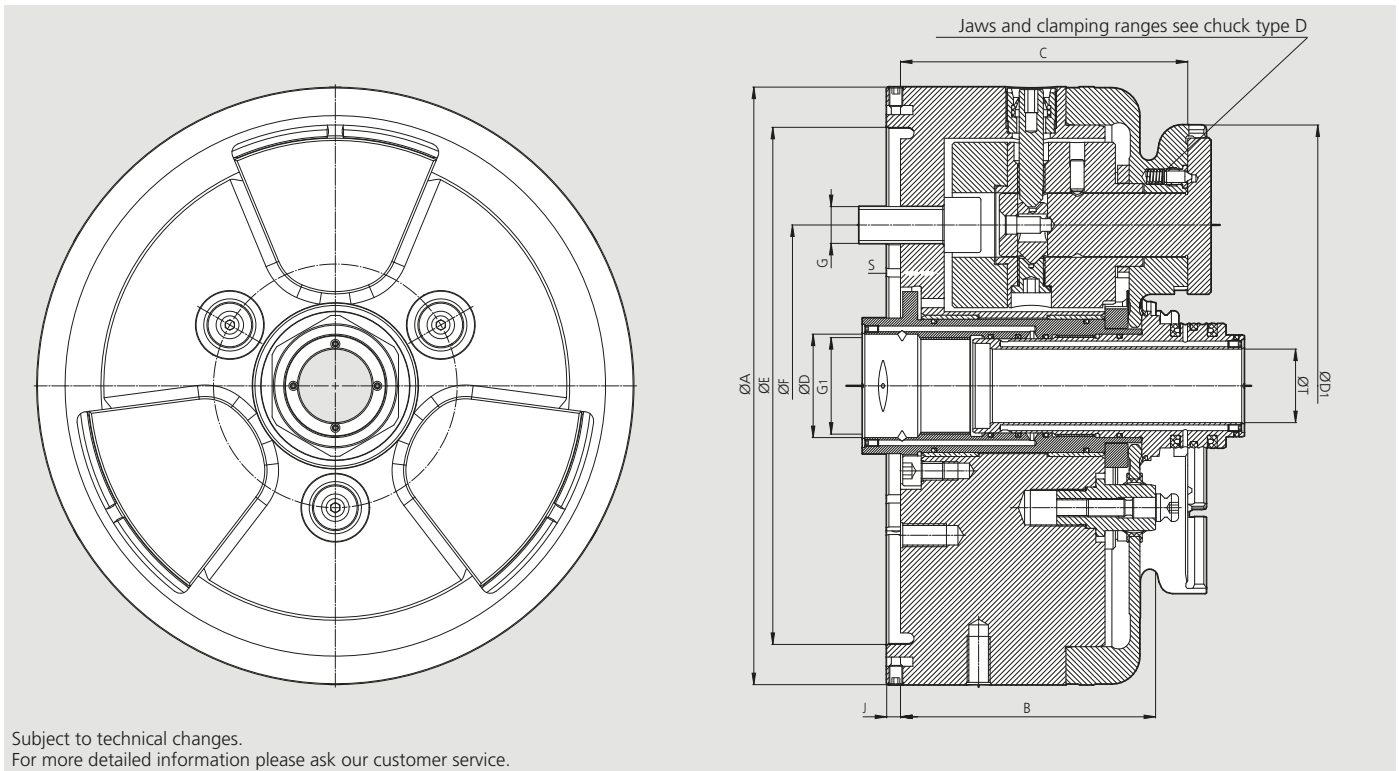
* Additional draw pull to the diaphragme force actuated by the actuating cylinder.

Advice: The max. allowed speed for the application is permanently marked on the corresponding top jaws and must not be exceeded.

Important: Never rotate the chuck without inserted jaws, otherwise the centrifugal force compensation mechanism will get damaged.

- Clamping jaws
- Rotating double piston cylinder
- Installation





Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			D-PLUS-260	D-PLUS-315
Mounting	Size		225	275
	A	mm	260	315
	B	mm	111	111
	C	mm	125	125
	D1	mm	227	275
	E	mm	225	275
	F	mm	140	171.4
	G		M16	M16
	G1		M42x1.5	M60x1.5
	J	mm	6	6
	P H6	mm	45	63
Piston stroke	S	mm	1.5	1.5
Through hole	T	mm	32	50
Draw pull min. / max.*	F1	kN	0-25	0-30
Draw push for chuck open	F2	kN	25	30
Moment of inertia		kg·m ²	0.45	0.75
Weight without top tooling		kg	44	65
Recommended actuating cylinders	Type		SIN-DFR	SIN-DFR

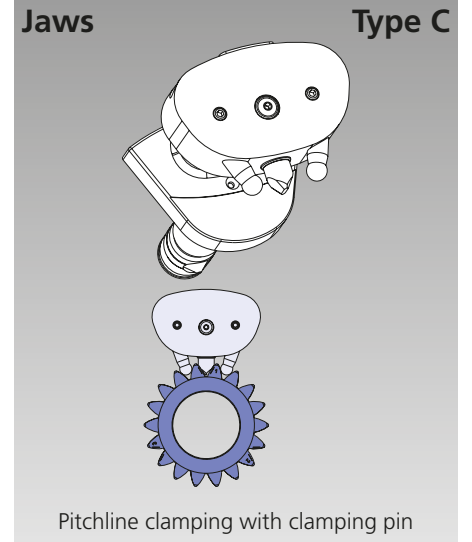
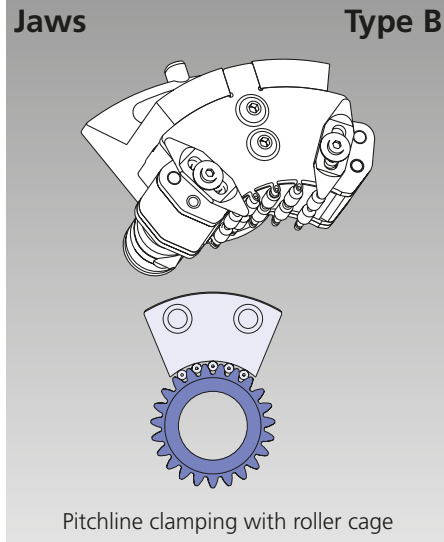
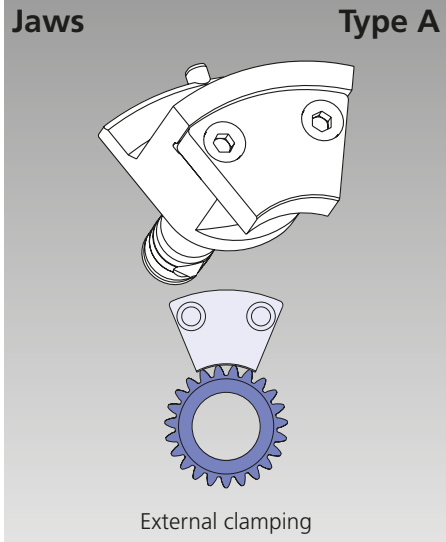
* Additional actuation force to the diaphragm spring clamping force applied by the clamping cylinder.

Advice: The max. allowed speed for the application is permanently marked on the corresponding top jaws and must not be exceeded.

Advice: Please note, that it is important, that the cylinder force for pushing and pulling can be set to different values independently!

Important: Never rotate the chuck without inserted jaws, otherwise the centrifugal force compensation mechanism will get damaged.

- Radial O.D. or pitch line clamping
- With central bore
- Centrifugal force compensation



D-VARIO

Diaphragm chuck
FLEXIBLE MODULAR SYSTEM

Main dimensions and technical data



Application/customer benefits

- Flexible solution for grinding with quick adjustment for short set up times

Technical features

- Adjustable, modular jaw system for clamping different work pieces with the same jaws
- Key Lock System for quick positioning of the pitch of different work pieces
- Micrometer fine adjustment of the center line
- For small, medium and large batch sizes
- Workstop with medium feed for air sensing and integrated coolant nozzles optional
- Jaws for O.D. clamping (Type A) optional
- D-Vario Configurator: free application to configurate your set up (www.smw-autoblok.de/qr/vario)

Standard equipment

Diaphragm chuck D-Vario (with mounting bolts)

Optional accessories in the modular system:

Pitch line clamping

- 6 different jaw sets for different outside diameters
- Key Lock System for different pitches of gears (see figure A, B and C)
- Clamping pins for different modules (Dia. of ball \varnothing 3,0 mm to 6,0 mm)
- Locators

O.D. clamping (Type A)

- 4 different jaw blanks for different outside diameters
- Factory finished jaws
- Locators

D-VARIO Configurator Software:



- Safe and quick configuration of all set-ups for different gears
- Web-APP: from anywhere with any device feasible (internet access needed)
- Data export possible

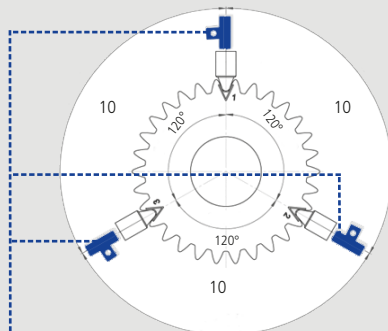
With this free of charge D-Vario configurator a complete top jaw and the corresponding locator with the locator pins can be configured for your gears.

The export function allows you to save your results on your PC.

Start Web-APP: www.smw-autoblok.de/qr/dvario

A: Number of teeth is divisible by 3

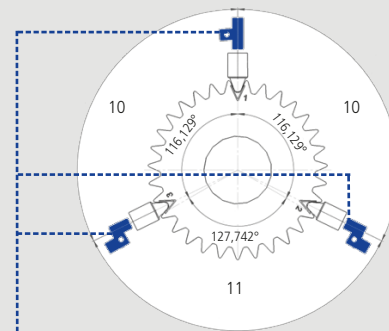
Example of application:
gear with number of teeth $[z] = 30$



- ▶ Specification of Key Lock System:
3x Key straight

B: Number of teeth is not divisible by 3

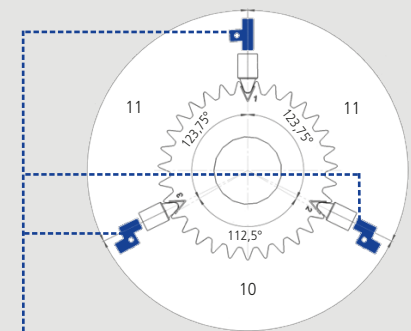
Example of application:
gear with number of teeth $[z] = 31$



- ▶ Specification of Key Lock System:
1x Key straight,
2x Key for number of teeth 31

C: Number of teeth is not divisible by 3

Example of application:
gear with number of teeth $[z] = 32$



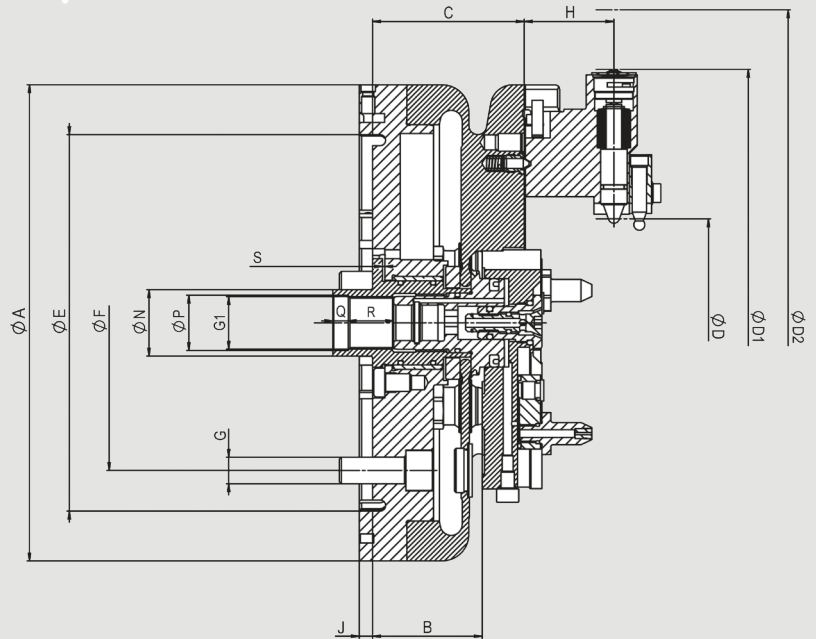
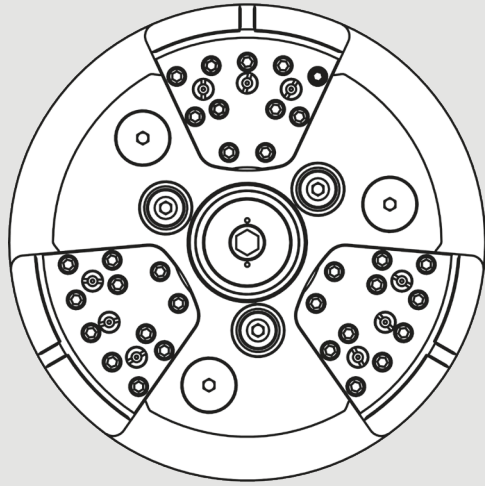
- ▶ Specification of Key Lock System:
1x Key straight,
2x Key for number of teeth 32

D-VARIO

Diaphragm chuck
FLEXIBLE MODULAR SYSTEM

Main dimensions and technical data

Top jaws and locator base are optional.



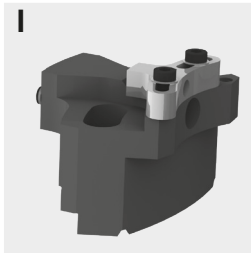
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			D-VARIO 215
Mounting			Z170
Id. No.			069100
	A	mm	215
Locating Face for Locator	B	mm	49.5
	C	mm	68.5
Clamping range min. / max.	D	mm	24-144
Swing min.	D1	mm	215
Swing max.	D2	mm	264
	E	mm	170
	F	mm	133.4
	G		M12
	G1		M24 x 1.5
Jaw height	H	mm	40.5
	J	mm	6
	P H8	mm	25
	Q	mm	7
	R	mm	20
Piston stroke	S	mm	1.0
Jaw stroke at distance H		mm	0.95
Draw pull min. / max.*		kN	0-15
Draw push for chuck open		kN	15
Moment of inertia		kg·m ²	0.082
Weight without top tooling		kg	12.2
Recommended actuating cylinders	Type		SIN-DFR

* Additional draw pull to the diaphragm force actuated by the actuating cylinder.

Advice: Please note: It is important, that the cylinder force for pushing and pulling can be set to different values independently.

Configuration of the set up for pitch line clamping within only 5 steps:



At first you need to choose your matching top jaw (size 1 - 6) for the outside diameter [da] of the gear to be machined. Each size of top jaw can cover 20 mm outside diameter using two different types of clamping pins (Type A and B). One set of top jaw consists of 3 pieces including 1 straight key lock insert.



The determination of the spherical clamping pins is made according to the ball dimension of the gear. There are 2 types of clamping pins: Type A for the first 10 mm of the clamping range of the top jaws. Type B for the second 10 mm of the clamping range of the top jaws.



Optionally prelocator pins are available. Prelocator pins are used at automatic loading. The determination is made according to the clamping pins used.

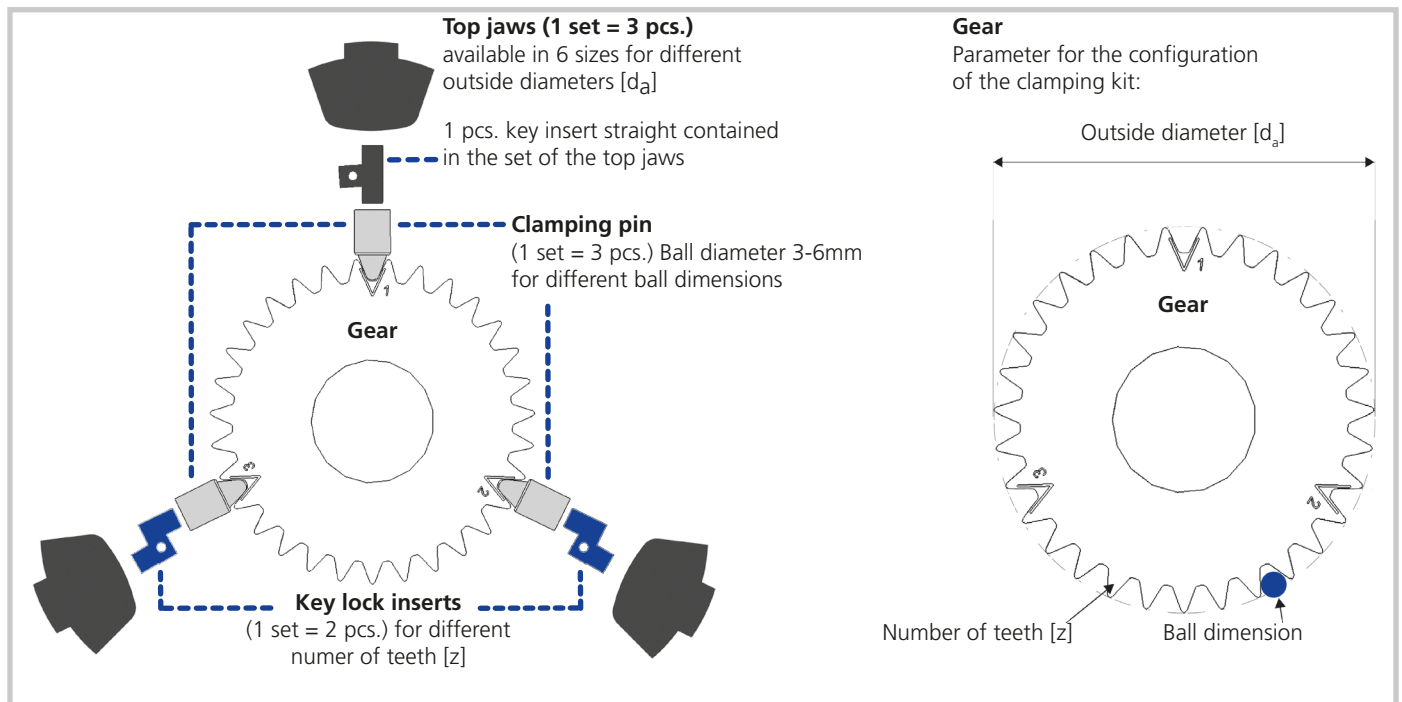


One set of Key Lock insert consists of 2 keys. Gears, which number of teeth that is divisible by 3 can be machined with 3 of the same type Key Lock insert (straight). For all gears, which number of teeth is not divisible by 3, there are different key insert sets available according to the number of teeth. The Key Lock inserts are the same for all 6 sizes of top jaws.



The following types of locator bases are available:
Type A: without air sensing / without nozzle for coolant
Type B: without air sensing / with nozzle for coolant
Type C: with air sensing / with nozzle for coolant
The height of the locator posts is depending on the gear.

Overview of the clamping kit:



D-Vario Configurator

free application to configure your set up

www.smw-autoblok.de



■ Configuration of the clamping kit

I. Determination of the top jaws

Top Jaws		Size	1	2	3	4	5	6
Outside diameter of gear	d_a	mm	24-44	44-64	64-84	84-104	104-124	124-144
Number of teeth	z	number	16-37	14-44	13-86	13-86	13-86	13-86
Inside clearance diameter of jaws		mm	48	68	88	108	128	148
Swing diameter		mm	164	184	204	224	244	264
Weight / set		kg	2.9	3.0	3.0	3.1	3.1	3.1
Order number (set of 3 pieces)	Id. No.		630741	630742	630743	630744	630745	630746


Clamping pin Type		A	B	A	B	A	B	A	B	A	B	A	B
Clamping range	mm	24-34	34-44	44-54	54-64	64-74	74-84	84-94	94-104	104-114	114-124	124-134	134-144

II. / III. Determination of the clamping pins (and optional prelocator pins)

Clamping pin type	Set	Type A	Available prelocator pins	Type B	Available prelocator pins
Ball diameter \varnothing 3,0	Id. No.	630851B	339835	630844B	339843
Ball diameter \varnothing 3,5	Id. No.	630852B	339836	630845B	339844
Ball diameter \varnothing 4,0	Id. No.	630853B	339837	630846B	339845
Ball diameter \varnothing 4,5	Id. No.	630854B	339838	630847B	339846
Ball diameter \varnothing 5,0	Id. No.	630855B	339839	630848B	339847
Ball diameter \varnothing 5,5	Id. No.	630856B	339840	630849B	339848
Ball diameter \varnothing 6,0	Id. No.	630857B	339841	630850B	339849

Clamping pins


Clamping pin type A



Top jaw 1	\varnothing 24-34 mm
Top jaw 2	\varnothing 44-54 mm
Top jaw 3	\varnothing 64-74 mm
Top jaw 4	\varnothing 84-94 mm
Top jaw 5	\varnothing 104-114 mm
Top jaw 6	\varnothing 124-134 mm

Ball diameter
 \varnothing 3; 3,5; 4; 4,5; 5; 5,5; 6

Clamping pin type B



Top jaw 1	\varnothing 34-44 mm
Top jaw 2	\varnothing 54-64 mm
Top jaw 3	\varnothing 74-84 mm
Top jaw 4	\varnothing 94-104 mm
Top jaw 5	\varnothing 114-124 mm
Top jaw 6	\varnothing 134-144 mm

Ball diameter
 \varnothing 3; 3,5; 4; 4,5; 5; 5,5; 6

► **Clamping pin type A**
For the first 10 mm of the clamping range of the top jaws.

► **Clamping pin type B**
For the second 10 mm of the clamping range of the top jaws.

► **Compatibility**
All types and sizes of clamping pins are compatible to all top jaws.

IV. Key Lock inserts for different number of teeth of gears

Id. No. Key Lock insert for gears which number of teeth is not divisible by 3 (1 set = 2 pieces)

z = 10	z = 11	z = 13	z = 14	z = 16	z = 17	z = 19	z = 20	z = 22	z = 23
339911	339912	339913	339914	339915	339916	339917	339918	339919	339920
z = 25	z = 26	z = 28	z = 29	z = 31	z = 32	z = 34	z = 35	z = 37	z = 38
339921	339922	339923	339924	338725	339925	339926	339927	339928	339929
z = 40	z = 41	z = 43	z = 44	z = 46	z = 47	z = 49	z = 50	z = 52	z = 53
339930	339931	339932	339933	339934	339935	339936	339937	339938	339939
z = 55	z = 56	z = 58	z = 59	z = 61	z = 62	z = 64	z = 65	z = 67	z = 68
339940	339941	339942	339943	339944	339945	339946	339947	339948	339949
z = 70	z = 71	z = 73	z = 74	z = 76	z = 77	z = 79	z = 80	z = 82	z = 83
339950	339951	339952	339953	339954	339955	339956	339957	339958	339959
z = 85	z = 86								
339960	339961								

Id. No. key lock insert for gears which number of teeth is divisible by 3 (1 set = 2 pieces)

straight									
338724									

Order Example:

Gear with number of teeth 32

▶ not divisible by 3

▶ Id. No. 339925 (1 set = 2 pieces)

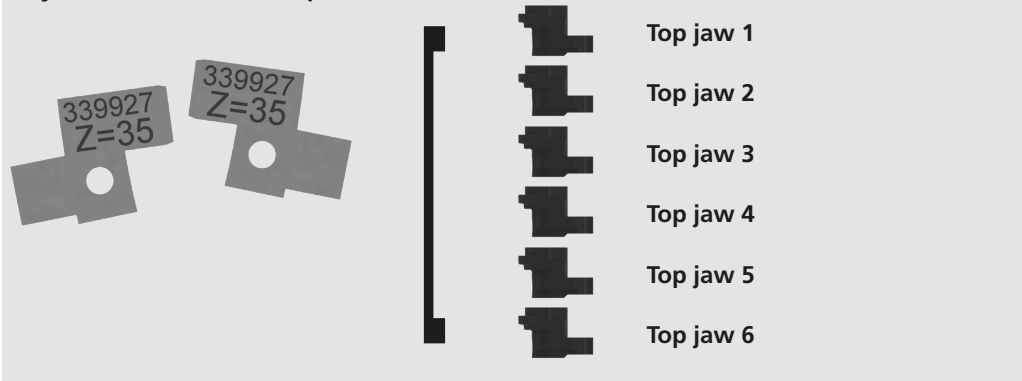
Gear with number of teeth 33

▶ divisible by 3

▶ Id. No. 338724 (1 set = 2 pieces)

1 straight key lock that comes with the chuck always remains in use.

Key lock insert (1 set = 2 pieces)



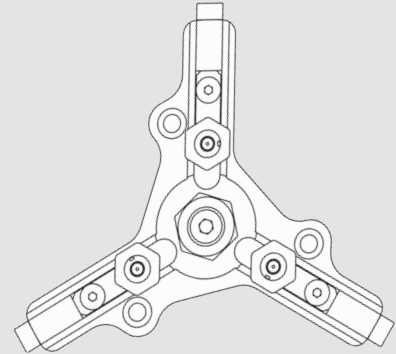
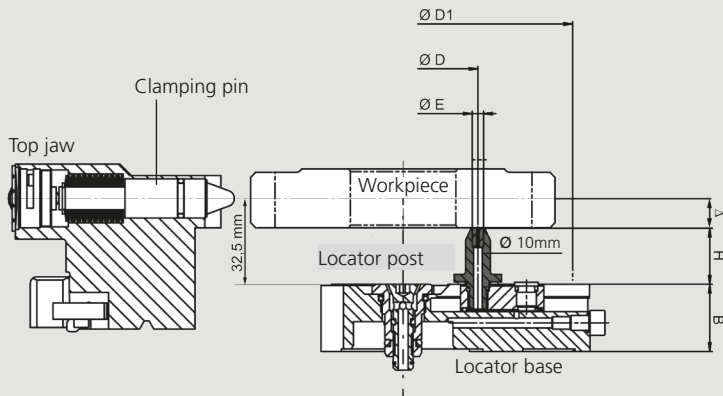
▶ Compatibility

All key lock inserts are compatible to all top jaws.

■ Configuration of the clamping kit

V. Locator base

Locator base



Determination of height of locator posts:
 Δ = Distance between clamping position and locating face
 Height of locator posts [H] = 32,5 mm - Δ

Clamping position = 1/2 serration length / at longer serrations it is the requested clamping position.
 In case the lowest face is not the locating face, please ask our customer service.

Locator base			Type A	Type B	Type C
Medium feed for air sensing			-	-	X
Nozzle for coolant			-	X	X
Locating diameter min.	D	min.	22	47	47
Locating diameter max.	D1	max.	136	136	136
Width	B	mm	27	27	27
Order Number		Id. No.	339860	339859	339858

Locator posts with contact face diameter [E] = Ø 2.5 mm	
Height [H] = 12.5 mm	339861
Height [H] = 15.0 mm	339862
Height [H] = 17.5 mm	339863
Height [H] = 20.0 mm	339864
Height [H] = 22.5 mm	339865
Height [H] = 25.0 mm	339866
Height [H] = 27.5 mm	339867
Height [H] = 30.0 mm	339868
Height [H] = 32.5 mm	339869
Height [H] = 35.0 mm	339870
Height [H] = 37.5 mm	339871
Height [H] = 40.0 mm	339872
Height [H] = 42.5 mm	339873
Height [H] = 45.0 mm	339874
Height [H] = 47.5 mm	339875
Height [H] = 50.0 mm	339876

I.D. Number is for one set (= 3 pieces)

Locator posts with contact face diameter [E] = Ø 4.5 mm	
Height [H] = 12.5 mm	339877
Height [H] = 15.0 mm	339878
Height [H] = 17.5 mm	339879
Height [H] = 20.0 mm	339880
Height [H] = 22.5 mm	339881
Height [H] = 25.0 mm	339882
Height [H] = 27.5 mm	339883
Height [H] = 30.0 mm	339884
Height [H] = 32.5 mm	339885
Height [H] = 35.0 mm	339886
Height [H] = 37.5 mm	339887
Height [H] = 40.0 mm	339888
Height [H] = 42.5 mm	339889
Height [H] = 45.0 mm	339890
Height [H] = 47.5 mm	339891
Height [H] = 50.0 mm	339892

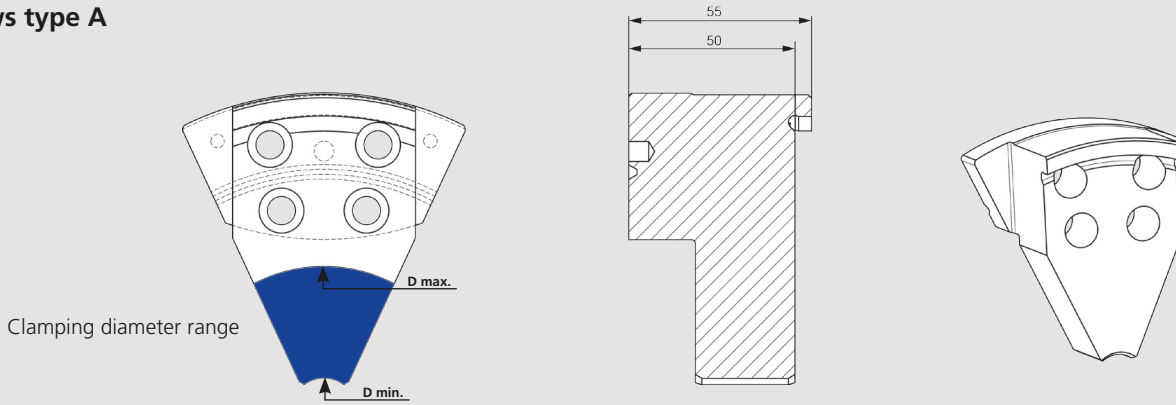
I.D. Number is for one set (= 3 pieces)

D-VARIO

Diaphragm chuck
FLEXIBLE MODULAR SYSTEM

■ Jaws type A for O.D. clamping

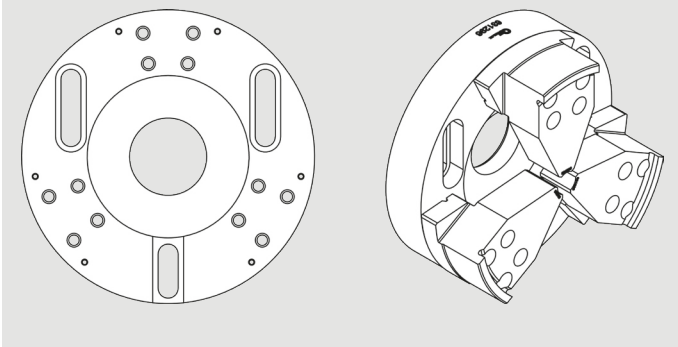
Jaws type A



Jaws type A		1	2	3	4	5	6
Clamping Range Ø D min. - D max.	mm	20-40	40-60	60-80	80-100	100-120	120-140
Weight / set	kg	1.1	1.1	1.0	1.0	1.0	0.8
Blank jaws (set of 3 pieces)	Id. No.	631484		631485		631486	631487
Jaws factory finished* (set of 3 pieces)	Id. No.	631488	631489	631490	631491	631492	631493

* Jaws are factory finished according to the specified clamping diameter.
Note: The clamping diameter must be specified in case of order.

Device

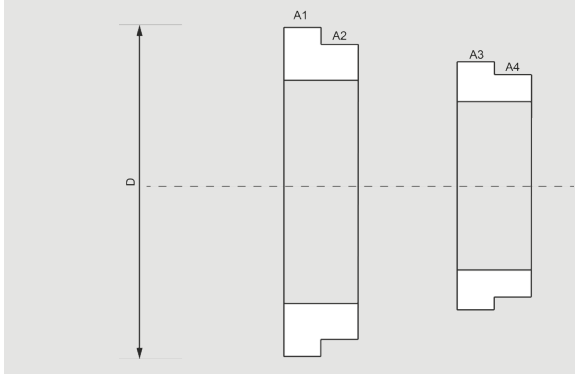


Device for machining of the blank jaws type A

Jaws type A sizes 1 - 6	631296
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The device is needed to pre-machine the blank jaws type A. Then, the jaws must be finish ground to the clamping diameter on the D-Vario chuck. For this operation, the jaws have to be clamped with the grinding rings.

Grinding rings (1 Set = 2 pieces)



Recommended grinding rings (1 set = 2 pieces)

Jaws type A sizes 1 - 6	631309
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Grinding data:

1. Grinding	A1	D = 177.0 mm	residual jaw stroke 0.25 mm
2. Grinding	A2	D = 176.9 mm	residual jaw stroke 0.20 mm
3. Grinding	A3	D = 176.8 mm	residual jaw stroke 0.15 mm
4. Grinding	A4	D = 176.7 mm	residual jaw stroke 0.10 mm

The clamping diameter A1 is used for the first finish grinding process. The smaller clamping diameter of the grinding rings (A2-A4) are used to regrind worn or damaged existing jaws.



Face drivers

High precision face drivers
for machining between center pins

- Machining of the entire surface of the workpiece with one single operation
- Power operated
- Highest run-out accuracy

■ Power operated on the side of the spindle



Application/customers benefits

- Machining of the entire surface of the workpiece in one single operation
- For the machining of the surface of soft and hardened workpieces
- Center pin with carbide insert for highest running accuracy

Technical features

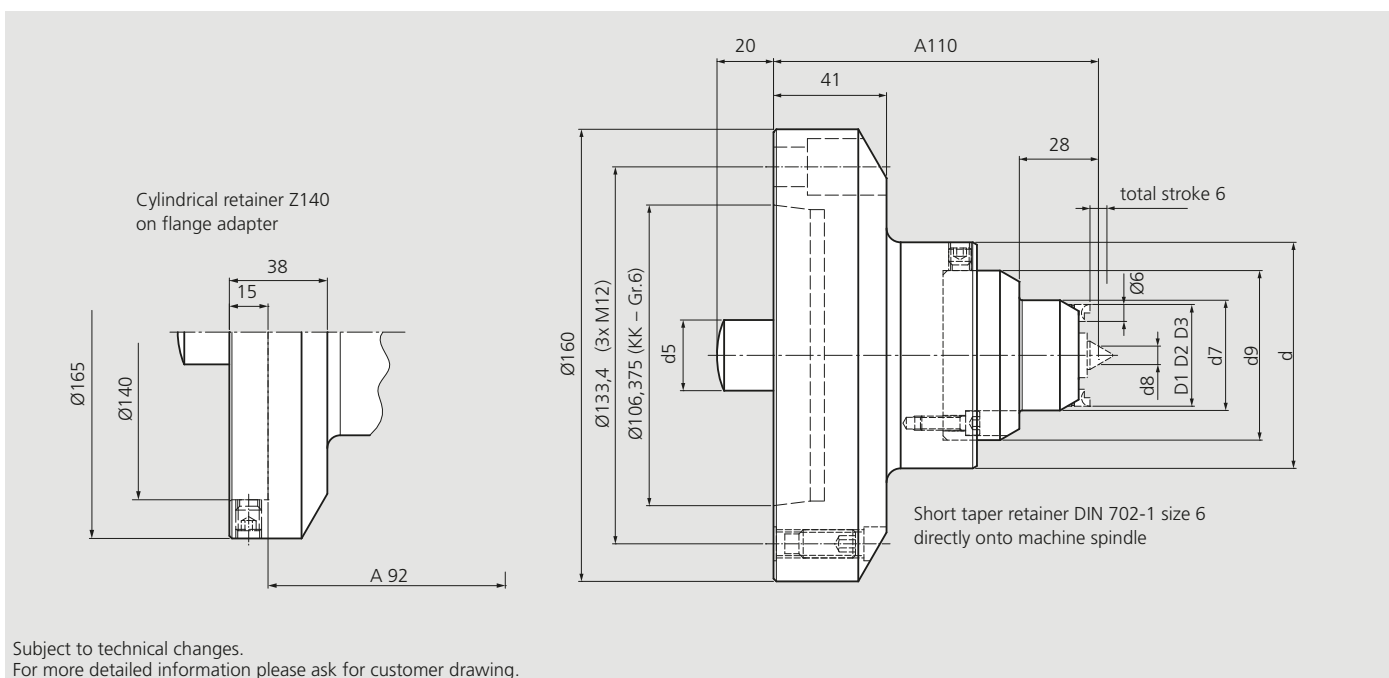
- Highest run-out accuracy < 0.003 mm
- Compensating drive elements
- Retractable drive pins in case of on- or off-loading
- Fine adjustment at face drivers for highest run-out requirements

Standard equipment

Face driver FDG
without changeable parts

Ordering example

Pneumatic pancake cylinder CPG-FDG
Id. No. 045891



Technical Data

Id. No. Z140	Id. No. KK Gr. 6	Type	d	Center Ø	d5	d7	d8	d9	Clamping-Ø		
									D1	D2	D3
204869	204876	FDG 0	65	1 - 3	18	16	1,5	48	6	9	15
204870	204877	FDG 1	65	1 - 5	18	18	3	48	8	11	17
204871	204878	FDG 2	65	2 - 6,5	18	21	4,25	48	11	14	20
204872	204879	FDG 3	65	4 - 8,5	18	25	6,25	48	15	18	24
204873	204880	FDG 4	77	4 - 9	25	38	6,5	60	27	30	36
204874	204881	FDG 5	85	6 - 11	25	46	8,5	68	35	38	44
204875	204882	FDG 6	110	10 - 15	25	62	12,5	85	50	53	59

Face drivers with morse taper retainer according to DIN 228 available on request.

NOTE Pancake cylinder CPG for the pneumatic actuation of face drivers FDG available.

Changeable parts

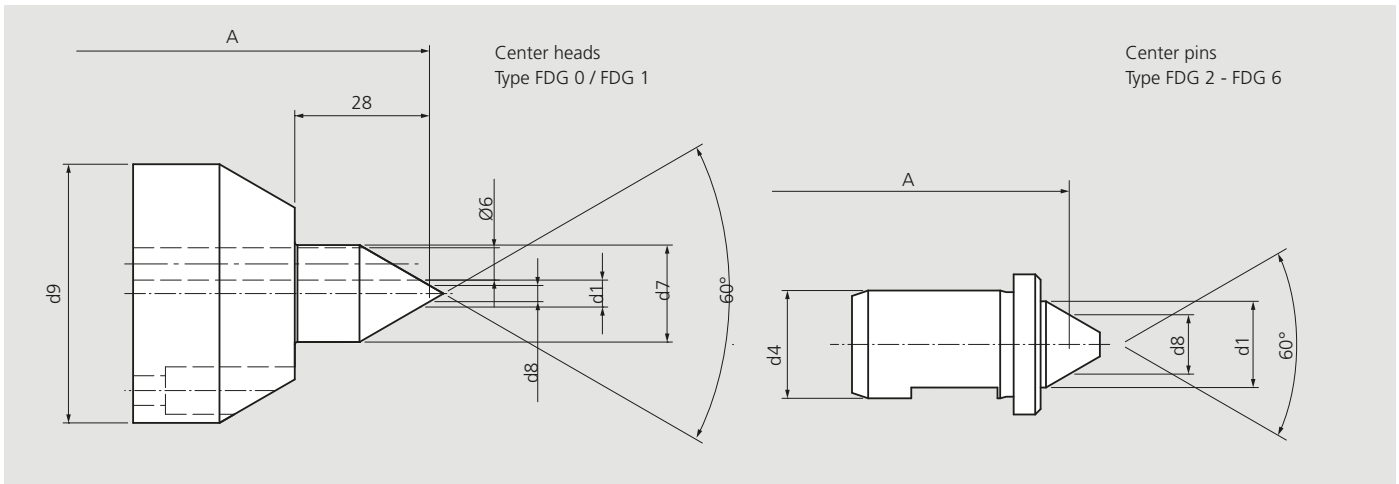
Center heads / Center pins



Application/customer benefits

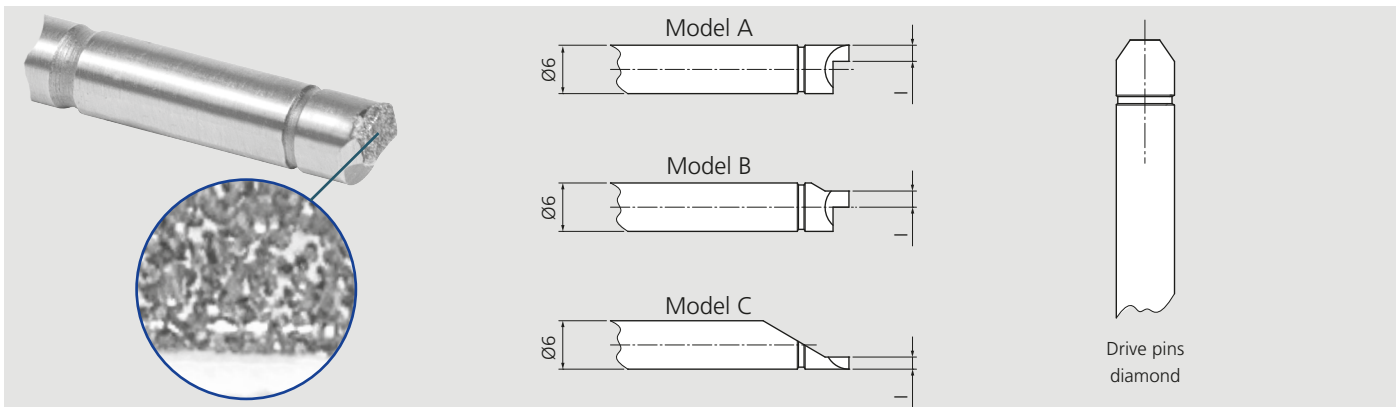
- Center pin with carbide insert
- Maximum rigidity
- Highest change accuracy
- Fixed safely via set screw and plane surface inside the face driver

Center heads Type FDG 0 and FDG 1 60° center with carbide coating.
Center pins Type FDG 2 to FDG 6 carbide design.



Id.-No. Center pin	Type	d1	d4	Center Ø	d7	d8	d9
204883	FDG 0	3	-	1 - 3	18	1.5	48
204884	FDG 1	5	-	1 - 5	20	3	48
204885	FDG 2	7.8	6	2 - 6.5	-	4.25	-
204886	FDG 3	9.8	8	4 - 8.5	-	6.25	-
204887	FDG 4	10	14	4 - 9	-	6.5	-
204888	FDG 5	12	18	6 - 11	-	8.5	-
204889	FDG 6	16	20	10 - 15	-	12.5	-

Drive pins with diamond coating

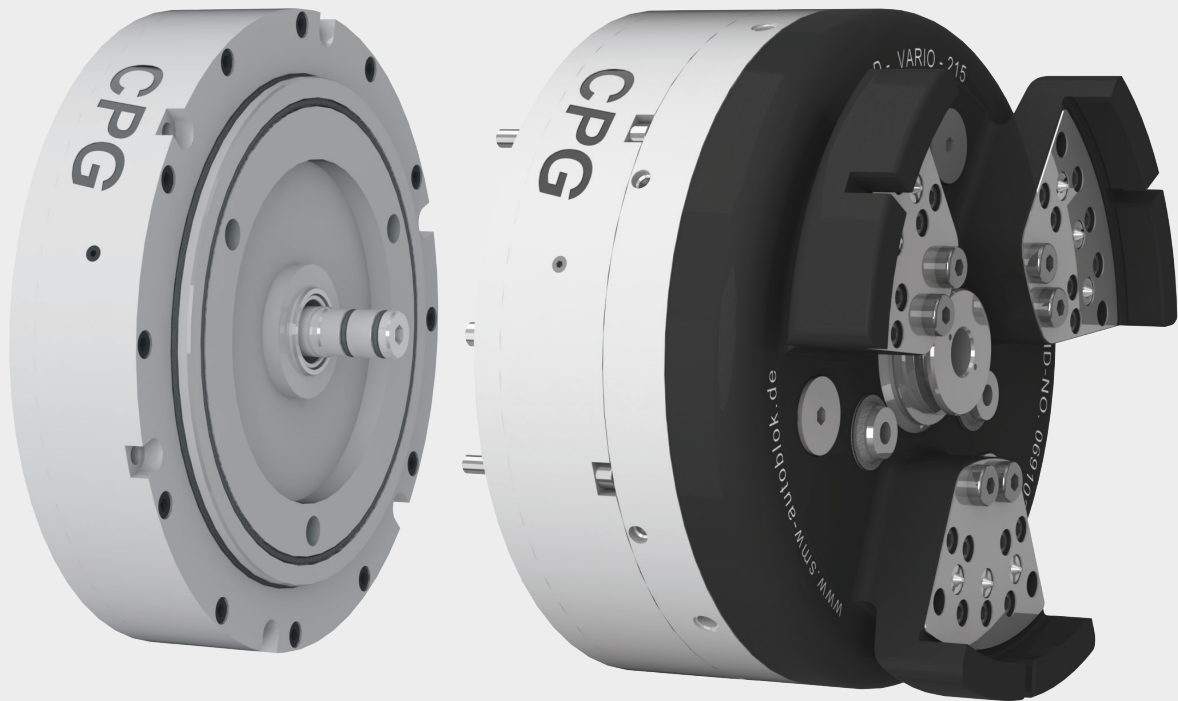


Id. No. drive pin	Type	Clamping diameter	l	Model
204890	diamond	D1	1.5	C
204891	diamond	D2	3	B
204892	diamond	D3	3	A

- Drive pins for torque transmission onto the workpiece
- Drive pins with diamond coating
- High frictional coefficient

Clamping diameter D1/D2/D3 see technical data.

Further dimensions on request.



Example: CPG with D-VARIO diaphragm chuck

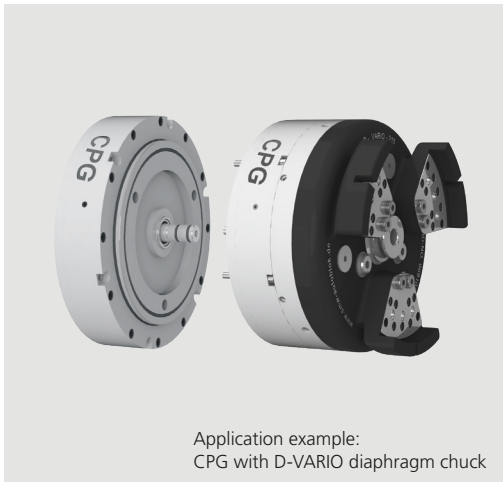
Pancake cylinders

Pneumatic pancake cylinder

for diaphragm chuck D-VARIO and face driver FDG

- Easy installation for grinding and turning machines without hydraulic unit
- Operating pressure 2-8 bar
- Medium feed for air / coolant

- Pneumatic actuation (2-8 bar)
- Easy installation for grinding and turning machines



Application example:
CPG with D-VARIO diaphragm chuck

Application/customer benefits

- For the actuation of diaphragm chuck D-VARIO and face driver FDG
- Easy installation for grinding and turning machines without hydraulic unit
- Compact design

Technical features

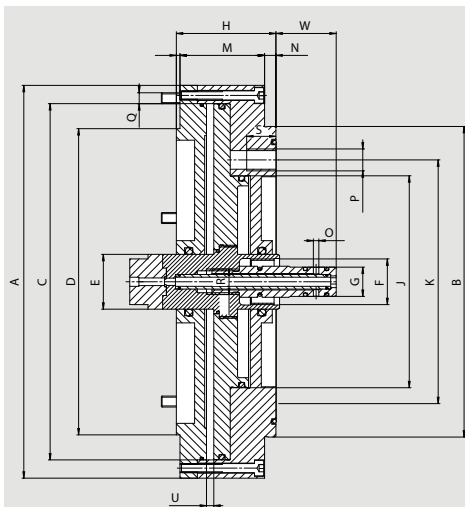
- Operating pressure 2-8 bar
- Maximum axial piston force push 21 kN and pull 7 kN
- 1 additional medium feed for air / coolant
- Air service unit with water separator and oil feed necessary
- Air feed tube necessary

Standard equipment

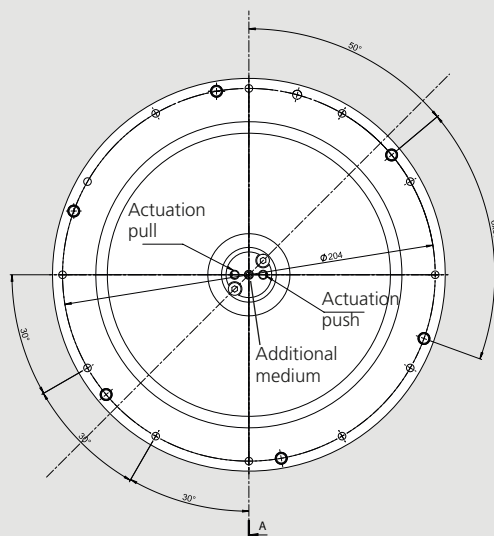
Pneumatic pancake cylinder
(without air feed tube)

Ordering example

Version D-VARIO Id.No. 045863
Version FDG Id.No. 045891
APFL3 Id.No. 5302595



Subject to technical changes.
For more detailed information please ask for customer drawing.



Accessory



APFL3 Air feed tube

- 3 Connections:
1x Actuation „push“
1x Actuation „pull“
1x Additional medium channel for air/coolant

Id. No. 5302595

Technical Data

SMW-AUTOBLOK Type			CPG 215
	A	mm	215
	B	mm	170
	C	mm	195
	D	mm	167.6
	E	mm	30
	F	mm	M25x1.5
	G	mm	16
	H	mm	54.5
	J	mm	116
	K	mm	133.4
	L	mm	2
	M	mm	46.3
	N	mm	6.2
	O	mm	3
	P	mm	3x M12x120°
	Q	mm	M6
	R	mm	M14
	S	mm	16
	U	mm	4
Piston stroke			
Axial force 6 bar (pull)		kN	5
Axial force at 6 bar (push)		kN	16
Moment of inertia		kg·m ²	0.09
Max. speed		r.p.m.	2.500
Piston area (piston pull)		cm ²	98
Piston area (piston push)		cm ²	291
Operating pressure (**)		bar	2-8
Weight		kg	11.1

(*) Version FDG contains reducing fl ange Z140. Total stroke max. 4mm.

(**) Operating pressure for opening the D-VARIO chuck min. 6 bar



I.D. Clamping

Segment sleeve mandrels

Clamping diameter \varnothing 18 - 105 mm

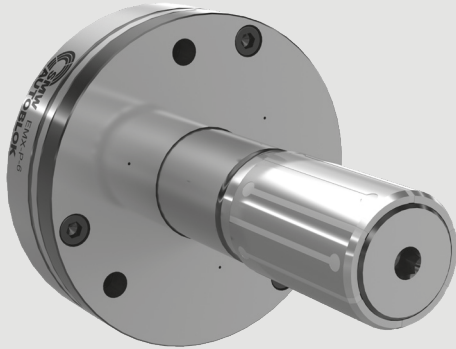
- For ID clamping
- Rigid design

EMX-P

Expanding mandrel
Power operated

Expanding mandrels Ø 14.7 - 131.7 mm

- Size 1 - 11
- Highest concentricity
- Air sensing



Application/customer benefits

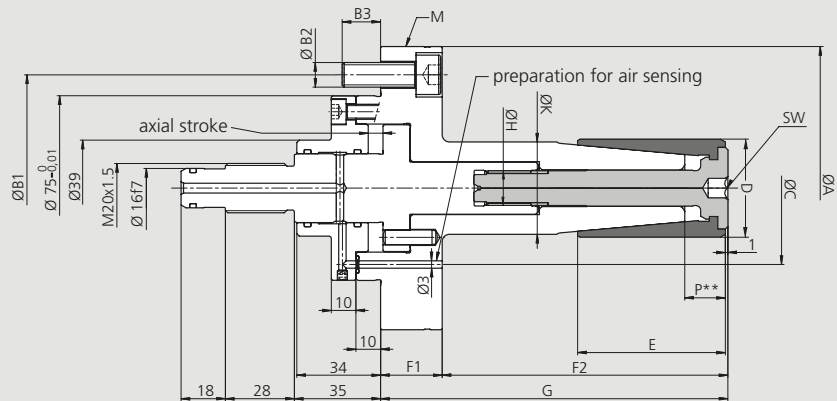
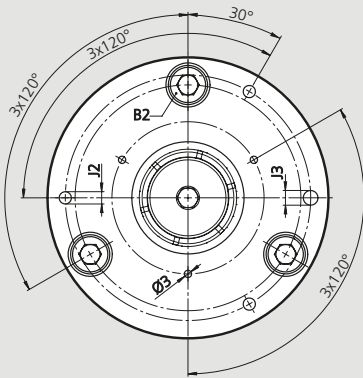
- For turning, milling, grinding and gear cutting operations
- High accuracy and torque transmission due to fixed arbor
- Axial pull down by axial movement of the clamping sleeve during actuation
- Quick set-up

Technical features

- Large expansibility 1 mm in diameter
- Power operated / manual lubrication
- Flange mounting
- Very rigid design
- Vulcanized expanding sleeve for protection from the penetration of chips (option)
- Preparation for air sensing

Standard equipment

Basic mandrel with draw bolt for power operation
Mounting bolts



Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type Id. No.	EMX-P-1 9310000	EMX-P-2 9320000	EMX-P-3 9330000	EMX-P-4 9340000	EMX-P-5 9350000	EMX-P-6 9360000	EMX-P-7 9370000	EMX-P-8 9380000	EMX-P-9 9390000	EMX-P-10 9300000	EMX-P-11 9310010
A	115	115	115	115	115	115	135	135	135	135	135
B1	92	92	92	92	92	92	112	112	112	112	112
B2	3 x M10	3 x M10	3 x M10	3 x M10	3 x M10	3 x M10	3 x M10	3 x M10	3 x M10	3 x M10	3 x M10
B3	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
C 3 x 120° Ø 3	62	62	62	62	62	62	62	76	85	98	110
D Clamping length	14.7 - 19.7	19.7 - 24.7	24.7 - 29.7	29.7 - 34.7	34.7 - 39.7	39.7 - 44.7	44.7 - 54.7	54.7 - 64.7	64.7 - 81.7	81.7 - 101.7	101.7 - 131.7
E	35	40	46	50	60	60	80	90	100	122	140
F1	25	25	25	25	25	25	25	25	25	25	25
F2	76	86	97	106	116	116	152	158	192	218	245
G	101	111	122	131	141	141	177	183	217	243	270
H	M6	M8	M10	M11x1.5	M12	M14	M14	M14	M14	M20	M20
J1	100	100	100	100	100	100	115	115	115	115	115
J2	3 x M6	3 x M6	3 x M6	3 x M6	3 x M6	3 x M6	3 x M8	3 x M8	3 x M8	3 x M8	3 x M8
J3 H7	6	6	6	6	6	6	8	8	8	8	8
K f8	22	27	29	32	35	38	42	50	60	73	86
M transport	-	-	-	-	-	-	-	-	3 x M8	3 x M8	3 x M8
P**	13	15	15	15.5	16	16.5	18.5	20.5	21	21.5	26
WS (hex)	WS4	WS4	WS6	WS8	WS8	WS8	WS8	WS10	WS10	WS12	WS12

Technical data

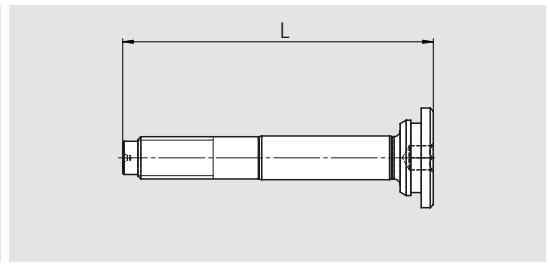
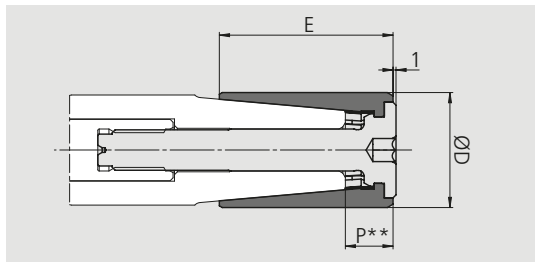
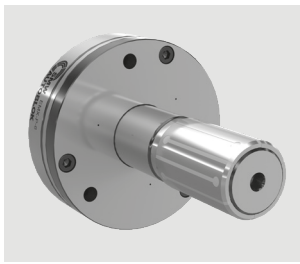
SMW-AUTOBLOK Type Id. No.	EMX-P-1 9310000	EMX-P-2 9320000	EMX-P-3 9330000	EMX-P-4 9340000	EMX-P-5 9350000	EMX-P-6 9360000	EMX-P-7 9370000	EMX-P-8 9380000	EMX-P-9 9390000	EMX-P-10 9300000	EMX-P-11 9310010
Axial stroke	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Sleeve expansion Ø *	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Max. axial force in kN	7	7	12	12	15	20	20	20	25	25	30
Max. transmittable torque in Nm	15	35	75	100	120	150	200	250	275	320	500
Weight in kg	2.9	3.0	3.1	3.2	3.3	3.4	4.6	5.2	6.6	8.7	11.9
Rec. actuating cylinders	SIN-S 70	SIN-S 70	SIN-S 85	SIN-S 85	SIN-S 85	SIN-S 100	SIN-S 100	SIN-S 100	SIN-S 100	SIN-S 100	SIN-S 125

All measurements in unclamped position = Right end position.

* from nominal dimension.

** Clamping on area P only is not allowed.

Ordering review



For basic mandrel							Clamping sleeve* with actuating screw	actuating screw	
type	Id.-No.	clamping range	ØD	E	expansibility	P**	Id.-No.	Id.-No.	L
EMX-P-1	9310000	14.7-19.7	14.7	35	1	12.7	9310147	9312000	76,5
			15.7	35	1	12.7	9310157		
			16.7	35	1	12.7	9310167		
			17.7	35	1	12.7	9310177		
			18.7	35	1	12.7	9310187		
EMX-P-2	9320000	19.7-24.7	19.7	40	1	14.7	9320197	9322000	81
			20.7	40	1	14.7	9320207		
			21.7	40	1	14.7	9320217		
			22.7	40	1	14.7	9320227		
			23.7	40	1	14.7	9320237		
EMX-P-3	9330000	24.7-29.7	24.7	46	1	14.7	9330247	9332000	87,5
			25.7	46	1	14.7	9330257		
			26.7	46	1	14.7	9330267		
			27.7	46	1	14.7	9330277		
			28.7	46	1	14.7	9330287		
EMX-P-4	9340000	29.7-34.7	29.7	50	1	15.2	9340297	9342000	93
			30.7	50	1	15.2	9340307		
			31.7	50	1	15.2	9340317		
			32.7	50	1	15.2	9340327		
			33.7	50	1	15.2	9340337		
EMX-P-5	9350000	34.7-39.7	34.7	60	1	15.7	9350347	9352000	103
			35.7	60	1	15.7	9350357		
			36.7	60	1	15.7	9350367		
			37.7	60	1	15.7	9350377		
			38.7	60	1	15.7	9350387		
EMX-P-6	9360000	39.7-44.7	39.7	60	1	16.2	9360397	9362000	103
			40.7	60	1	16.2	9360407		
			41.7	60	1	16.2	9360417		
			42.7	60	1	16.2	9360427		
			43.7	60	1	16.2	9360437		
EMX-P-7	9370000	44.7-54.7	44.7	80	1	18.2	9370447	9372000	117
			45.7	80	1	18.2	9370457		
			46.7	80	1	18.2	9370467		
			47.7	80	1	18.2	9370477		
			48.7	80	1	18.2	9370487		
			49.7	80	1	18.2	9370497		
			50.7	80	1	18.2	9370507		
			51.7	80	1	18.2	9370517		
			52.7	80	1	18.2	9370527		
			53.7	80	1	18.2	9370537		
EMX-P-8	9380000	54.7-64.7	54.7	90	1	20.2	9380547	9382000	127
			55.7	90	1	20.2	9380557		
			56.7	90	1	20.2	9380567		
			57.7	90	1	20.2	9380577		
			58.7	90	1	20.2	9380587		
			59.7	90	1	20.2	9380597		
			60.7	90	1	20.2	9380607		
			61.7	90	1	20.2	9380617		
			62.7	90	1	20.2	9380627		
			63.7	90	1	20.2	9380637		
EMX-P-9	9390000	64.7-81.7	64.7	100	1	20.7	9390647	9392000	137
			65.7	100	1	20.7	9390657		
			66.7	100	1	20.7	9390667		
			67.7	100	1	20.7	9390677		
			68.7	100	1	20.7	9390687		
			69.7	100	1	20.7	9390697		
			70.7	100	1	20.7	9390707		
			71.7	100	1	20.7	9390717		
			72.7	100	1	20.7	9390727		
			73.7	100	1	20.7	9390737		
			74.7	100	1	20.7	9390747		
			75.7	100	1	20.7	9390757		
			76.7	100	1	20.7	9390767		
			77.7	100	1	20.7	9390777		
			78.7	100	1	20.7	9390787		
79.7	100	1	20.7	9390797					
80.7	100	1	20.7	9390807					

* Id. No. XXXXXX-V = Clamping sleeve vulcanized.

** Clamping on area P only is not allowed.

EMX-P

Expanding mandrels Ø 14.7 - 131.7 mm

Expanding mandrel
Manual or power operated

■ Ordering review

basic mandrel							Clamping sleeve* with actuating screw	actuation screw	
type	Id. No.	clamping range	ØD	E	expansibility	P**	Id.-No.	Id. No.	L
EMX-P-10	9300000	81.7-101.7	81.7	122	1	21.7	9300817	9302000	165
			82.7	122	1	21.7	9300827		
			83.7	122	1	21.7	9300837		
			84.7	122	1	21.7	9300847		
			85.7	122	1	21.7	9300857		
			86.7	122	1	21.7	9300867		
			87.7	122	1	21.7	9300877		
			88.7	122	1	21.7	9300887		
			89.7	122	1	21.7	9300897		
			90.7	122	1	21.7	9300907		
			91.7	122	1	21.7	9300917		
			92.7	122	1	21.7	9300927		
			93.7	122	1	21.7	9300937		
			94.7	122	1	21.7	9300947		
			95.7	122	1	21.7	9300957		
			96.7	122	1	21.7	9300967		
			97.7	122	1	21.7	9300977		
			98.7	122	1	21.7	9300987		
			99.7	122	1	21.7	9300997		
			EMX-P-11	9310010	101.7-131.7	101.7	140		
102.7	140	1				26.2	9311027		
103.7	140	1				26.2	9311037		
104.7	140	1				26.2	9311047		
105.7	140	1				26.2	9311057		
106.7	140	1				26.2	9311067		
107.7	140	1				26.2	9311077		
108.7	140	1				26.2	9311087		
109.7	140	1				26.2	9311097		
110.7	140	1				26.2	9311107		
111.7	140	1				26.2	9311117		
112.7	140	1				26.2	9311127		
113.7	140	1				26.2	9311137		
114.7	140	1				26.2	9311147		
115.7	140	1				26.2	9311157		
116.7	140	1				26.2	9311167		
117.7	140	1				26.2	9311177		
118.7	140	1				26.2	9311187		
119.7	140	1				26.2	9311197		
120.7	140	1				26.2	9311207		
121.7	140	1	26.2	9311217					
122.7	140	1	26.2	9311227					
123.7	140	1	26.2	9311237					
124.7	140	1	26.2	9311247					
125.7	140	1	26.2	9311257					
126.7	140	1	26.2	9311267					
127.7	140	1	26.2	9311277					
128.7	140	1	26.2	9311287					
129.7	140	1	26.2	9311297					
130.7	140	1	26.2	9311307					

* Id. No. XXXXXX-V = Clamping sleeve vulcanized.

** Clamping on area P only is not allowed.

Notes

A large area of horizontal stripes in two shades of blue, alternating between a medium blue and a light blue. This area is intended for writing notes.

EMX-F/FP

Expanding mandrel
Power operated

Expanding mandrels Ø 19.7 - 132.9 mm

- Size 1 - 6
- Highest concentricity
- Air sensing



Application/customer benefits

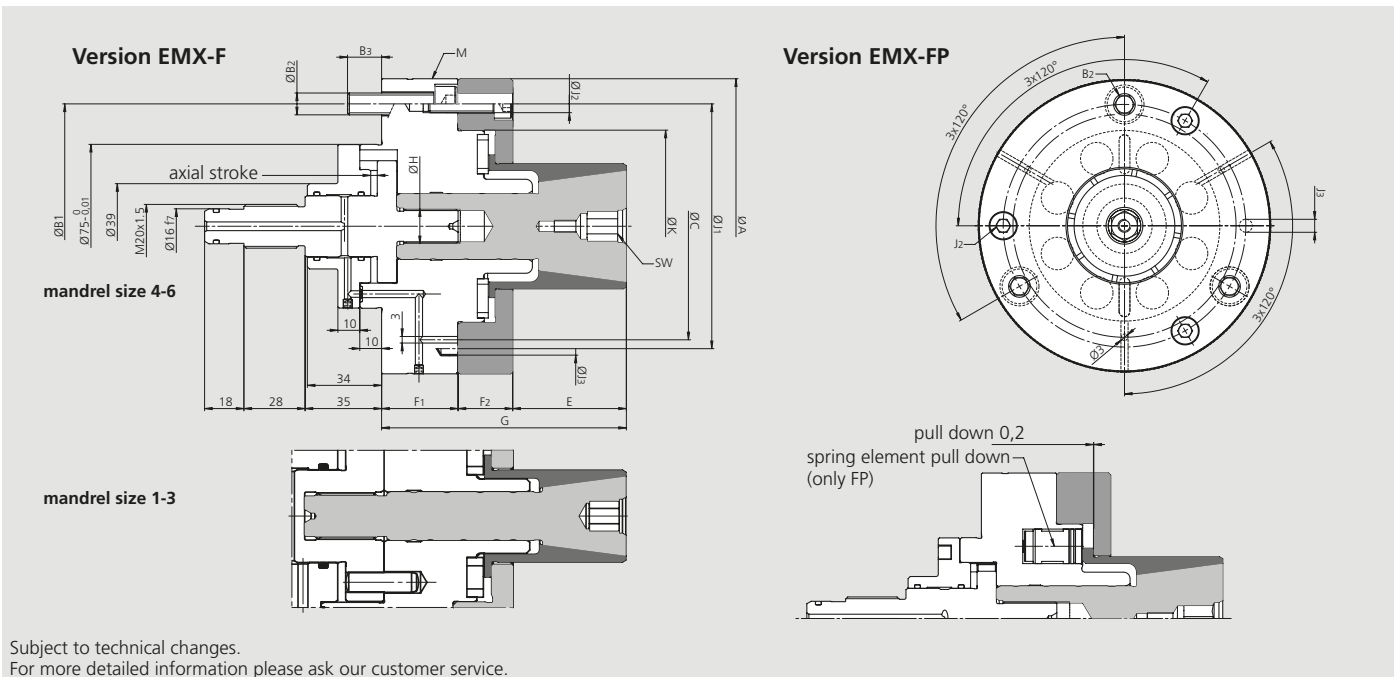
- For turning, milling, grinding and gear cutting operations
- High accuracy and torque transmission
- Clamping of very short workpieces on the front section of the sleeve possible
- FP: with axial pull down for best face run out

Technical features

- Large expansibility 0,6 - 1,2 mm depending on size
- Power operated / manual lubrication
- Flange mounting
- Very rigid design
- Vulcanized expanding sleeve for protection from the penetration of chips (option)
- Preparation for air sensing

Standard equipment

Basic mandrel with draw bolt for power operation
Mounting bolts



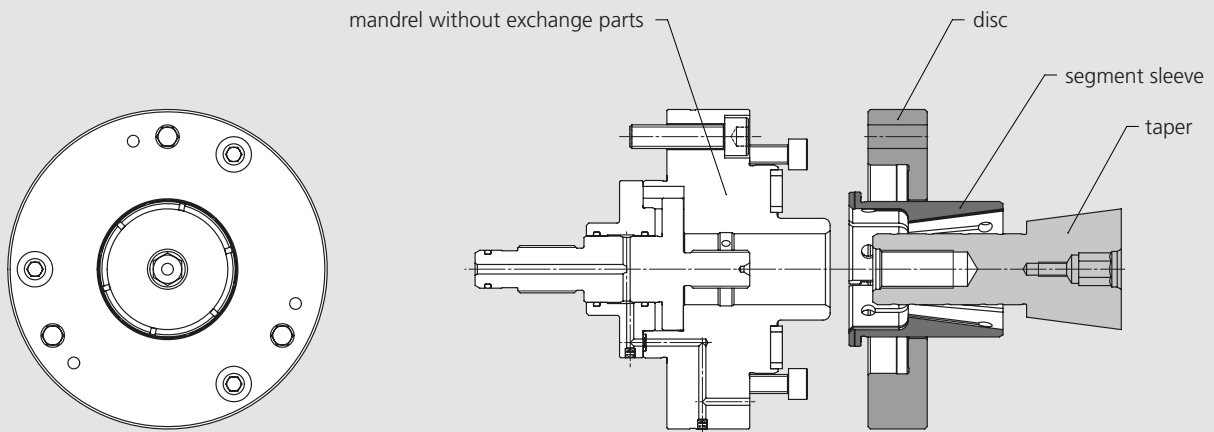
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type	EMX-F/FP-1	EMX-F/FP-2	EMX-F/FP-3	EMX-F/FP-4	EMX-F/FP-5	EMX-F/FP-6
Id. No.	EMX-F 9110000	9120000	9130000	9140000	9150000	9160000
	EMX-FP 9210000	9220000	9230000	9240000	9250000	9260000
A	115	115	115	135	165	210
B1	92	92	92	112	140	182
B2	3 x M10	3 x M10	3 x M10	3 x M10	3 x M12	3 x M12
B3	15.6	15.6	15.6	15.6	17.9	17.9
C	3 x 120° Ø 3	62	62	86	112	182
D	Clamping length	19.7-30.3	27.7-40.3	34.7-55.5	49.7-75.5	69.7-95.9
E		27	34	38	52	81
F1		30	30	30	35	40
F2		18	18	22	25	33
G		75	82	90	112	154
H		M10 x 1	M14 x 1.5	M16 x 1.5	M16 x 1.5	M20 x 1.5
J1		100	100	100	112	182
J2	3 x 120°	M6	M6	M6	M8	M8
J3	H7	6	6	6	8	8
K	g6	42	52	65	88	155
M transport	3 x 120°	-	-	-	M8	M10
WS (hex)		WS6	WS8	WS10	WS12	WS14

Technical data

SMW-AUTOBLOK Type	EMX-F/FP-1	EMX-F/FP-2	EMX-F/FP-3	EMX-F/FP-4	EMX-F/FP-5	EMX-F/FP-6
Axial stroke	3.0	2.4	3.0	3.0	5.0	5.0
Expansibility in dia.	0.6	0.6	0.8	0.8	1.2	1.2
Max. axial force in kN	12	20	25	25	30	30
Max. transmittable torque in Nm (dep. on clamping Ø)	51-80	110-165	175-280	250-380	420-580	520-800
Weight in kg	3.3	3.4	3.5	5.3	8.5	14.2
Actuating cylinders	CSN 200	200	250	250	250	250
	SIN-S 70	85	100	100	125	125

Ordering review



Subject to technical changes.
For more detailed information please ask our customer service.

mandrel without exchange parts						taper	disc	segment sleeve*	
without pull-down				with pull-down					
type	Id. No.	clamping range	sleeve expansion Ø	type	Id. No.				
EMX-F-1	9110000	19.7-30.3	0.6	EMX-FP-1	9210000	9112016	9113021	9110197	19.7
							9113022	9110202	20.2
							9113023	9110207	20.7
							9110212	9110212	21.2
							9110217	9110217	21.7
							9110222	9110222	22.2
							9110227	9110227	22.7
							9110232	9110232	23.2
							9110237	9110237	23.7
							9110242	9110242	24.2
							9110247	9110247	24.7
							9110252	9110252	25.2
9110257	9110257	25.7							
9110262	9110262	26.2							
EMX-F-2	9120000	27.7-40.3	0.6	EMX-FP-2	9220000	9112020	9113025	9110233	23.2
							9113026	9110237	23.7
							9113027	9110242	24.2
							9110247	9110247	24.7
							9110252	9110252	25.2
							9110257	9110257	25.7
							9110262	9110262	26.2
							9110267	9110267	26.7
							9110272	9110272	27.2
							9110277	9110277	27.7
							9110282	9110282	28.2
							9110287	9110287	28.7
9110292	9110292	29.2							
9110297	9110297	29.7							
EMX-F-2	9120000	27.7-40.3	0.6	EMX-FP-2	9220000	9122024	9123029	9120277	27.7
							9123030	9120282	28.2
							9123031	9120287	28.7
							9123032	9120292	29.2
							9123033	9120297	29.7
							9123034	9120302	30.2
							9123035	9120307	30.7
							9123036	9120312	31.2
							9123037	9120317	31.7
							9123038	9120322	32.2
							9123039	9120327	32.7
							9123040	9120332	33.2
9123041	9120337	33.7							
9123042	9120342	34.2							
9123043	9120347	34.7							
9123044	9120352	35.2							
EMX-F-2	9120000	27.7-40.3	0.6	EMX-FP-2	9220000	9122028	9123037	9120357	35.7
							9123038	9120362	36.2
							9123039	9120367	36.7
							9123040	9120372	37.2
							9123041	9120377	37.7
							9123042	9120382	38.2
							9123043	9120387	38.7
							9123044	9120392	39.2
							9123045	9120397	39.7
							9123046	9120397	39.7

* Id. No. XXXXX-y = Clamping sleeve vulcanized.

Expanding mandrel
Power operated

■ Ordering review

mandrel without exchange parts						taper	disc	segment sleeve*	
without pull-down				with pull-down					
type	Id. No.	clamping range	sleeve expansion Ø	type	Id. No.				
EMX-F-3	9130000	34.7-55.5	0.8	EMX-FP-3	9230000	9132030	9133037	9130347	34.7
							9133038	9130352	35.2
							9133039	9130357	35.7
							9133040	9130362	36.2
							9133041	9130367	36.7
							9133042	9130372	37.2
							9133043	9130377	37.7
							9133044	9130382	38.2
							9133045	9130387	38.7
							9133046	9130392	39.2
						9132037	9133047	9130397	39.7
							9133048	9130402	40.2
							9133049	9130407	40.7
							9133050	9130412	41.2
							9133051	9130417	41.7
							9133052	9130422	42.2
							9133053	9130427	42.7
							9133054	9130432	43.2
							9133055	9130437	43.7
							9133056	9130442	44.2
						9132044	9133057	9130447	44.7
							9133058	9130452	45.2
							9133059	9130457	45.7
							9133060	9130462	46.2
							9133061	9130467	46.7
							9133062	9130472	47.2
							9133063	9130477	47.7
							9133064	9130482	48.2
							9133065	9130487	48.7
							9133066	9130492	49.2
							9133067	9130497	49.7
							9133068	9130502	50.2
							9133069	9130507	50.7
							9133070	9130512	51.2
							9133071	9130517	51.7
							9133072	9130522	52.2
EMX-F-4	9140000	49.7-75.5	0.8	EMX-FP-4	9240000	9142044	9143052	9140497	49.7
							9143053	9140502	50.2
							9143054	9140507	50.7
							9143055	9140512	51.2
							9143056	9140517	51.7
							9143057	9140522	52.2
							9143058	9140527	52.7
							9143059	9140532	53.2
							9143060	9140537	53.7
							9143061	9140542	54.2
						9142051	9143062	9140547	54.7
							9143063	9140552	55.2
							9143064	9140557	55.7
							9143065	9140562	56.2
							9143066	9140567	56.7
							9143067	9140572	57.2
							9143068	9140577	57.7
							9143069	9140582	58.2
							9143070	9140587	58.7
							9143071	9140592	59.2
							9143072	9140597	59.7
							9143073	9140602	60.2
							9143074	9140607	60.7
							9143075	9140612	61.2
9142060	9143076	9140617	61.7						
	9143077	9140622	62.2						
	9143078	9140627	62.7						
	9143079	9140632	63.2						
	9143080	9140637	63.7						
	9143081	9140642	64.2						
	9143082	9140647	64.7						
	9143083	9140652	65.2						
9143084	9140657	65.7							
9143085	9140662	66.2							
9143086	9140667	66.7							
9143087	9140672	67.2							
9143088	9140677	67.7							
9143089	9140682	68.2							
9143090	9140687	68.7							
9143091	9140692	69.2							
9143092	9140697	69.7							
9143093	9140702	70.2							
9143094	9140707	70.7							
9143095	9140712	71.2							
9143096	9140717	71.7							
9143097	9140722	72.2							
9143098	9140727	72.7							
9143099	9140732	73.2							
9143100	9140737	73.7							
9143101	9140742	74.2							
9143102	9140747	74.7							

* Id. No. XXXXXX-v = Clamping sleeve vulcanized.

■ Ordering review

mandrel without exchange parts						taper	disc	segment sleeve*							
without pull-down				with pull-down											
type	Id. No.	clamping range	sleeve expansion Ø	type	Id. No.										
EMX-F-5	9150000	69.7-95.9	1.2	EMX-FP-5	9250000	9152063	9153072	9150697	69.7						
							9153073	9150707	70.7						
							9153074	9150717	71.7						
							9153075	9150727	72.7						
							9153076	9150737	73.7						
							9153077	9150747	74.7						
							9153078	9150757	75.7						
							9153079	9150767	76.7						
							9153080	9150777	77.7						
						9152071	9153081	9150787	78.7						
							9153082	9150797	79.7						
							9153083	9150807	80.7						
							9153084	9150817	81.7						
							9153085	9150827	82.7						
							9153086	9150837	83.7						
							9153087	9150847	84.7						
							9153088	9150857	85.7						
							9153089	9150867	86.7						
						9152080	9153090	9150877	87.7						
							9153091	9150887	88.7						
							9153092	9150897	89.7						
							9153093	9150907	90.7						
							9153094	9150917	91.7						
							9153095	9150927	92.7						
							9153096	9150937	93.7						
							9153097	9150947	94.7						
							EMX-F-6	9160000	89.7-132.9	1.2	EMX-FP-6	9260000	9162082	9163092	9160897
						9163093								9160907	90.7
						9163094								9160917	91.7
						9163095								9160927	92.7
						9163096								9160937	93.7
						9163097								9160947	94.7
						9163098								9160957	95.7
						9163099								9160967	96.7
						9163100								9160977	97.7
						9163101							9160987	98.7	
9162092	9163102	9160997	99.7												
	9163103	9161007	100.7												
	9163104	9161017	101.7												
	9163105	9161027	102.7												
	9163106	9161037	103.7												
	9163107	9161047	104.7												
	9163108	9161057	105.7												
	9163109	9161067	106.7												
	9163110	9161077	107.7												
9162103	9163111	9161087	108.7												
	9163112	9161097	109.7												
	9163113	9161107	110.7												
	9163114	9161117	111.7												
	9163115	9161127	112.7												
	9163116	9161137	113.7												
	9163117	9161147	114.7												
	9163118	9161157	115.7												
	9163119	9161167	116.7												
9162114	9163120	9161177	117.7												
	9163121	9161187	118.7												
	9163122	9161197	119.7												
	9163123	9161207	120.7												
	9163124	9161217	121.7												
	9163125	9161227	122.7												
	9163126	9161237	123.7												
	9163127	9161247	124.7												
	9163128	9161257	125.7												
9163129	9161267	126.7													
9163130	9161277	127.7													
9163131	9161287	128.7													
9163132	9161297	129.7													
9163133	9161307	130.7													
9163134	9161317	131.7													

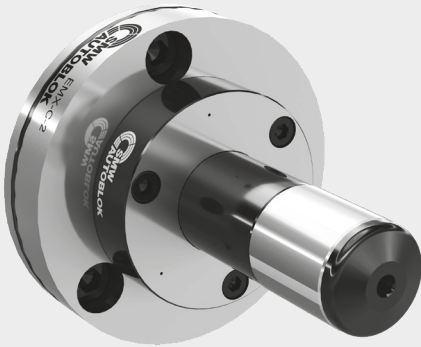
* Id. No. XXXXXX-v = Clamping sleeve vulcanized.

EMX-C

Segment sleeve mandrel
Power operated

Segment sleeve mandrel $\varnothing 25 - 121 \text{ mm}$

- Size 1 - 5
- Large expansibility



Application/customer benefits

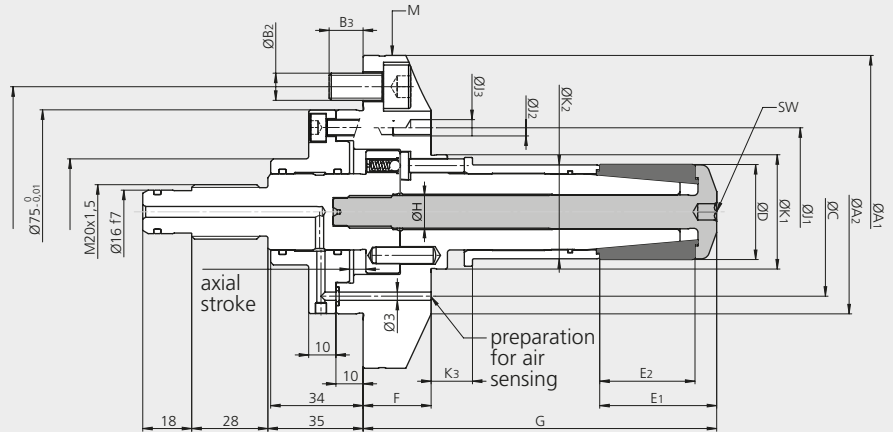
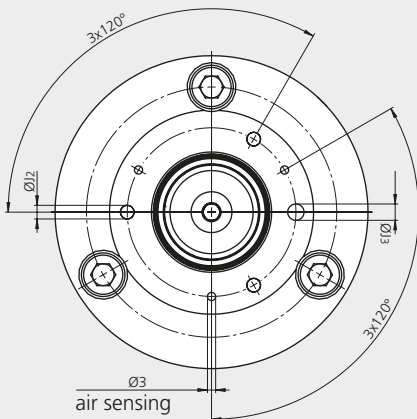
- Ideal for volume production and hard turning / grinding with wear resistant, case hardened and vulcanised clamping sleeves
- Highest accuracy and high torque transmission by means of fixed mandrel body
- Axial pull down by the axial clamping movement of the clamping sleeve = best face run out
- Clamping sleeve quick change for short setup times
- Preparation for air sensing

Technical details

- Large expansibility 1-1.2 mm depending on the size (-0,3 » +0,7 / -0,3 » +0,9 from nom. \varnothing)
- Case hardened and vulcanized segment sleeves
- Power operated / manual lubrication
- Rigid design with flange mounting

Standard equipment

Base mandrel with mounting bolts
Clamping screw



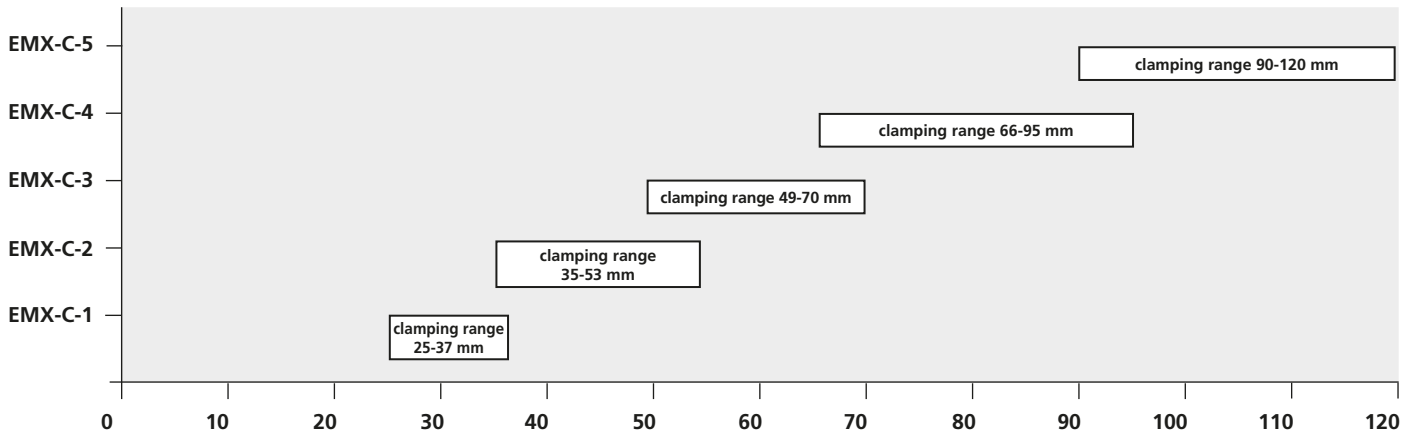
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type	EMX-C-1	EMX-C-2	EMX-C-3	EMX-C-4	EMX-C-5
Id. No.	9410000	9420000	9430000	9440000	9450000
A1	115	115	115	135	165
A2	75	75	115	135	165
B1	92	92	92	112	140
B2	3 x M10	3 x M10	3 x M10	3 x M10	3 x M12
B3	12.5	12.5	15.6	15.6	16
C	3 x 120° $\varnothing 3$	62	75	95	120
D	Clamping length	25-37	35-53	49-70	66-95
E1		37	43	55	64
E2	Clamping range	30	35	45	50
F		25	25	25	32
G		119	130	156.5	175.5
H		M8 x 1	M12 x 1.5	M14 x 1.5	M16 x 1.5
J1		62	62	100	115
J2	3 x 120°	M6	M6	M6	M8
J3	H7	6	6	6	8
K1	f8	35	42	54	73
K2	f8	24.5	34.5	48.5	64.5
K3		16.2	15.2	16.5	17
M transport	3 x 120°	-	-	-	M8
SW (hex)		SW5	SW6	SW10	SW12

Technical data

SMW-AUTOBLOK Type	EMX-C-1	EMX-C-2	EMX-C-3	EMX-C-4	EMX-C-5
Id. No.	9410000	9420000	9430000	9440000	9450000
Axial stroke	6.0	6.0	6.0	6.0	6.0
Expansibility in dia.	1.0	1.0	1.2	1.2	1.2
Max. actuating force in kN	8	12	15	25	30
Max. transmittable torque in Nm	35	90	120	250	400
Weight in kg	2.9	3.2	4.3	6.6	13.3
Rec. clamping cylinders	SIN-S 70	SIN-S 85	SIN-S 85	SIN-S 100	SIN-S 125

Overview clamping ranges



Clamping sleeves

EMX-C-1*

Ø	25	26	27	28	29	30	31	32	33	34	35	36	37
Id. No.	9410250	9410260	9410270	9410280	9410290	9410300	9410310	9410320	9410330	9410340	9410350	9410360	9410370

EMX-C-2*

Ø	35	36	37	38	39	40	41	42	43	44	45	46	47
Id. No.	9420350	9420360	9420370	9420380	9420390	9420400	9420410	9420420	9420430	9420440	9420450	9420460	9420470
Ø	48	49	50	51	52	53							
Id. No.	9420480	9420490	9420500	9420510	9420520	9420530							

EMX-C-3*

Ø	49	50	51	52	53	54	55	56	57	58	59	60	61
Id. No.	9430490	9430500	9430510	9430520	9430530	9430540	9430550	9430560	9430570	9430580	9430590	9430600	9430610
Ø	62	63	64	65	66	67	68	69	70				
Id. No.	9430620	9430630	9430640	9430650	9430660	9430670	9430680	9430690	9430700				

EMX-C-4*

Ø	66	67	68	69	70	71	72	73	74	75	76	77	78
Id. No.	9440660	9440670	9440680	9440690	9440700	9440710	9440720	9440730	9440740	9440750	9440760	9440770	9440780
Ø	79	80	81	82	83	84	85	86	87	88	89	90	91
Id. No.	9440790	9440800	9440810	9440820	9440830	9440840	9440850	9440860	9440870	9440880	9440890	9440900	9440910
Ø	92	93	94	95									
Id. No.	9440920	9440930	9440940	9440950									

EMX-C-5*

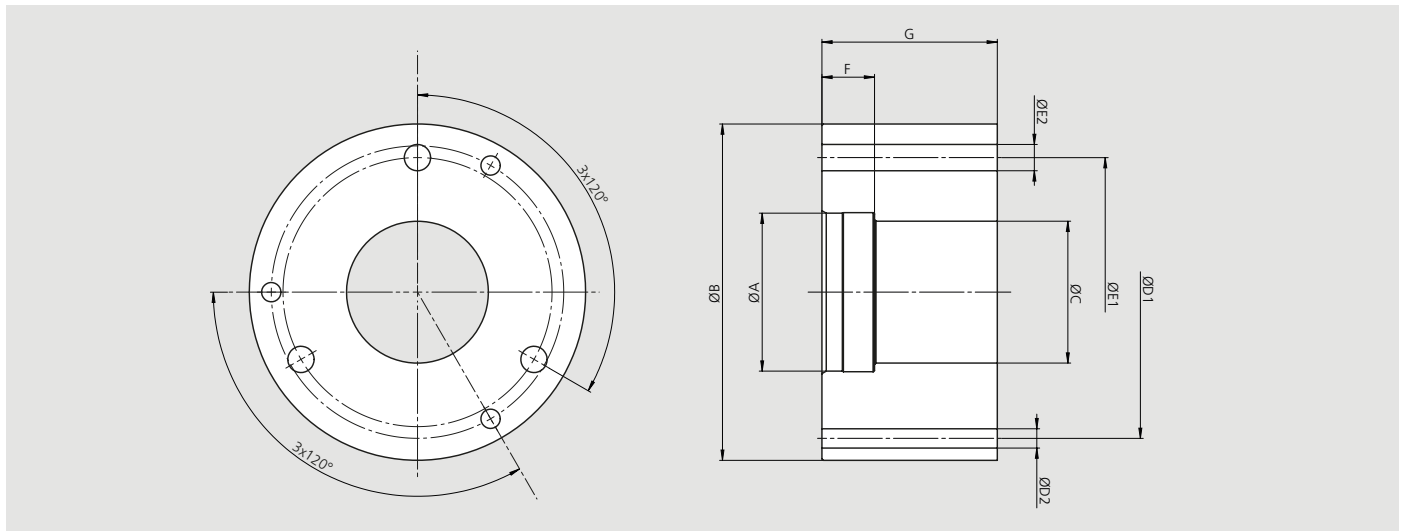
Ø	90	91	92	93	94	95	96	97	98	99	100	101	102
Id. No.	9450900	9450910	9450920	9450930	9450940	9450950	9450960	9450970	9450980	9450990	9451000	9451010	9451020
Ø	103	104	105	106	107	108	109	110	111	112	113	114	115
Id. No.	9451030	9451040	9451050	9451060	9451070	9451080	9451090	9451100	9451110	9451120	9451130	9451140	9451150
Ø	116	117	118	119	120								
Id. No.	9451160	9451170	9451180	9451190	9451200								

* The expanding sleeves have a loading clearance of 0,3 mm in dia.

Clamping screws

type	Id. No.
EMX-C-1	9412000
EMX-C-2	9422000
EMX-C-3	9432000
EMX-C-4	9442000
EMX-C-5	9452000

Workstop blanks soft for EMX-C

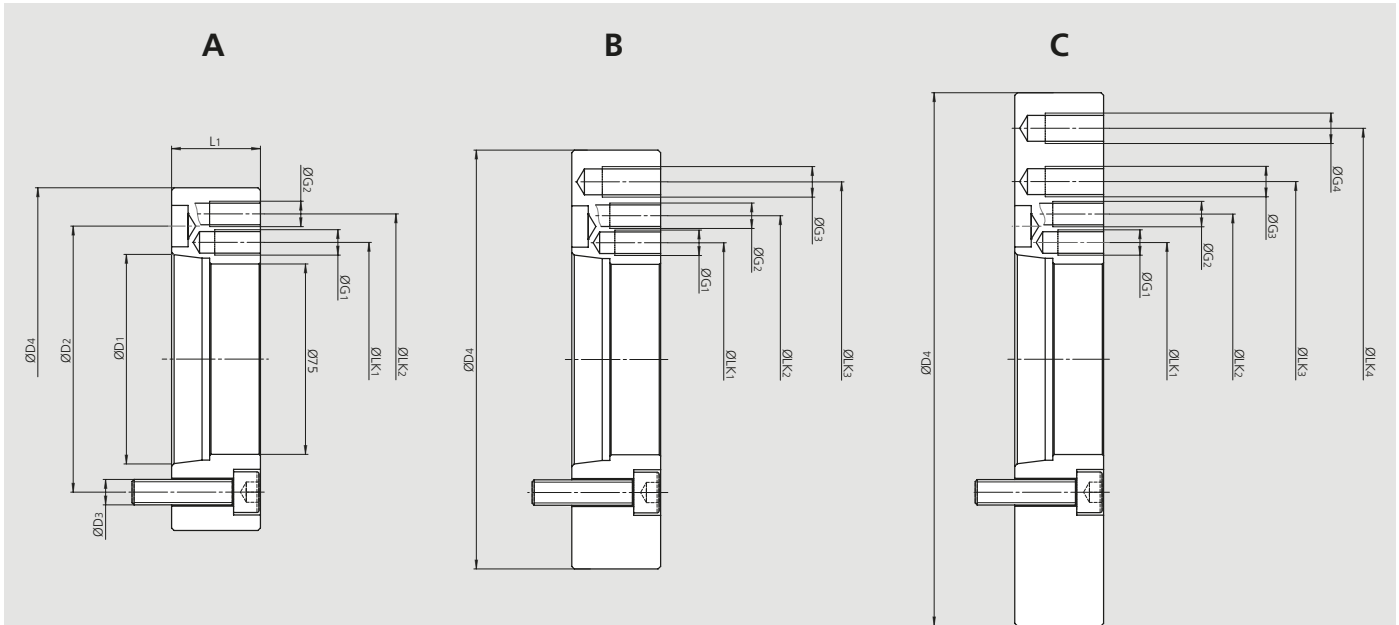


mandrel size	EMX-C-1		EMX-C-2		EMX-C-3		EMX-C-4		EMX-C-5	
	short	long	short	long	short	long	short	long	short	long
Id. No.	9413000	9413001	9423000	9423001	9433000	9433001	9443000	9443001	9453000	9453001
ØA	35	35	42	42	54	54	73	73	96	96
ØB	75	75	75	75	115	115	135	135	165	165
ØC	24.5	24.5	34.5	34.5	48.5	48.5	64.5	64.5	89.5	89.5
ØD1	62	62	62	62	100	100	115	115	140	140
ØD2	6.6	6.6	6.6	6.6	6.6	6.6	9	9	9	9
ØE1	-	-	-	-	92	92	112	112	140	140
ØE2	-	-	-	-	9	9	9	9	12	12
F	17.2	17.2	16.2	16.2	17.5	17.5	18	18	23	23
G	40	75	45	85	60	110	70	125	85	160

Adapters

- EMX-P, EMX-F/FP, EMX-C have cylindrical mounting
- Adapters for DIN 55026 / ISO-A 702/1 spindle noses

ISO-A for sleeve expanding mandrels

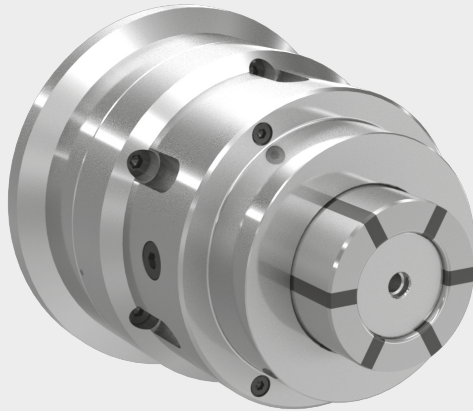


Subject to technical changes.
For more detailed information please ask our customer service.

Technical data

adapter flange Id. No.	mm	spindle nose ISO	D1	D2	D3	D4	L1	LK1	G1	LK2	G2	LK3	G3	LK4	G4
9000051	mm	A5	82.563	104.8	3 x M10	135	35	92	3 x M10	112	3 x M10	-	-	-	-
9000052	mm	A5	82.563	104.8	3 x M10	165	35	92	3 x M10	112	3 x M10	140	3 x M12	-	-
9000053	mm	A5	82.563	104.8	3 x M10	210	35	92	3 x M10	112	3 x M10	140	3 x M12	182	3 x M12
9000061	mm	A6	106.375	133.4	3 x M10	165	36	92	3 x M10	112	3 x M10	140	3 x M12	-	-
9000062	mm	A6	106.375	133.4	3 x M10	210	36	92	3 x M10	112	3 x M10	140	3 x M12	182	3 x M12
9000081	mm	A8	139.719	171.4	3 x M10	210	45	92	3 x M10	112	3 x M10	140	3 x M12	182	3 x M12

appropriate adapter flanges	spindle nose ISO	EMX-P	EMX-F/FP	EMX-C	type
9000051	A5	0-1-2-3-4-5-6-7-8-9-10-11	1-2-3-4	1-2-3-4	A
9000052	A5	0-1-2-3-4-5-6-7-8-9-10-11	1-2-3-4-5	1-2-3-4-5	B
9000053	A5	0-1-2-3-4-5-6-7-8-9-10-11	1-2-3-4-5-6	1-2-3-4-5	C
9000061	A6	0-1-2-3-4-5-6-7-8-9-10-11	1-2-3-4-5	1-2-3-4-5	B
9000062	A6	0-1-2-3-4-5-6-7-8-9-10-11	1-2-3-4-5-6	1-2-3-4-5	C
9000081	A8	0-1-2-3-4-5-6-7-8-9-10-11	1-2-3-4-5-6	1-2-3-4-5	C



Application/customer benefits

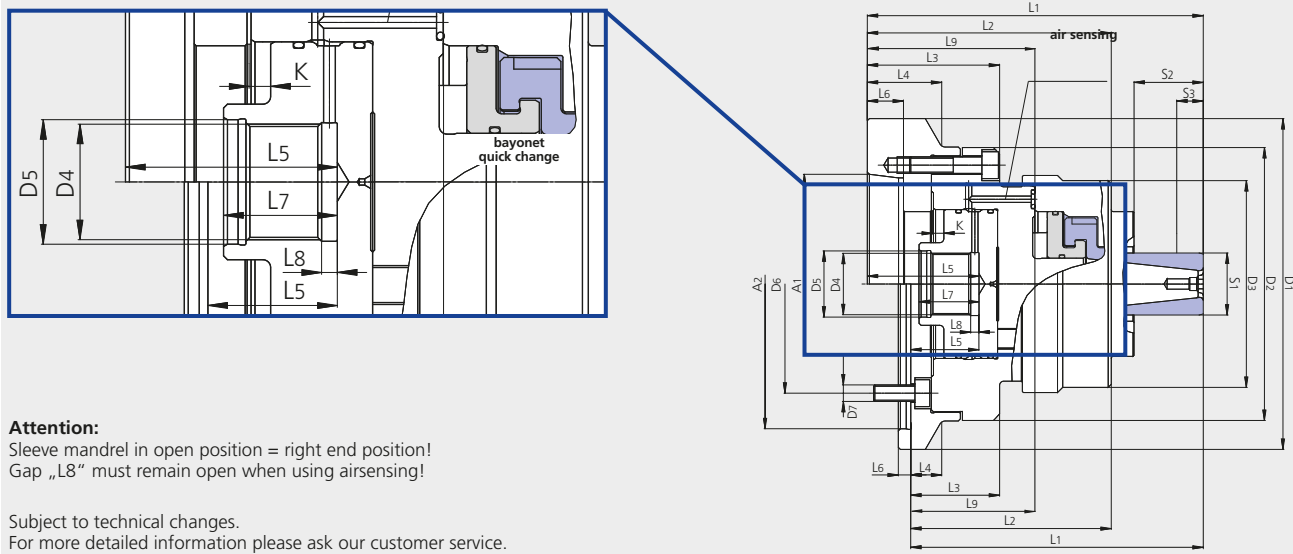
- Ideal for volume production and hard turning / grinding with wear resistant, case hardened and vulcanised clamping sleeves
- Highest accuracy and high torque transmission by means of fixed mandrel body
- Axial pull down by the axial clamping movement of the clamping sleeve = best face run out
- Clamping sleeve quick change for short setup times
- Preparation for air sensing

Technical details

- Large expansibility 0.8-1.2 mm depending on the size (The clamping sleeves have a max. radial expansibility in diameter of ± 0.4 mm or ± 0.6 mm from the nominal diameter.)
- Power operated
- Rigid design with flange mounting
- Tapped holes in the face for axial stops

Standard equipment

Base mandrel with mounting bolts



Attention:

Sleeve mandrel in open position = right end position!
Gap „L8“ must remain open when using air sensing!

Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type	EM-S-1			EM-S-2			EM-S-3					EM-S-4				
mounting	A5	A6	Z140	A5	A6	Z140	A5	A6	A08	Z140	Z170	A5	A6	A8	Z140	Z170
Id. No.	202734	202735	205082	202737	202738	205085	202740	202741	203132	205086	205134	203384	203385	203427	205088	205089
Short taper mounting DIN 55026	A1	A5	A6	-	A5	A6	-	A5	A6	A8	-	-	A5	A6	A8	-
Center mounting	A2 H5	-	-	140	-	-	140	-	-	-	140	170	-	-	-	140
D1	132	160	150	132	160	150	132	160	202	150	180	157	157	202	157	180
D2	132	132	132	132	132	132	132	132	132	132	132	157	157	157	157	157
D3	82	82	82	100	100	100	114	114	114	114	114	143	143	143	143	143
D4	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5
D5 H7	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
D6	104.8	133.4	104.8	104.8	133.4	104.8	104.8	133.4	171.4	104.8	133.4	104.8	133.4	171.4	104.8	133.4
D7	4 x M10	4 x M12	3 x M10	4 x M10	4 x M12	3 x M10	4 x M10	4 x M12	4 x M16	3 x M10	6 x M12	4 x M10	4 x M12	4 x M16	3 x M10	6 x M12
L1	138.5	138.5	123.5	162.5	162.5	147.5	177.5	177.5	179.5	162.5	162.5	193	191	195	193	191
L2	113.5	113.5	98.5	118	118	103	123	123	126	108	108	132.5	130.5	134.5	132.5	130.5
L3	61	61	46	64	64	49	75	75	77	60	60	80	78	82	80	78
L4	-	36	15	-	36	15	-	36	47	15	30	-	-	47	-	13
L5	53	53	38	54	54	39	50	50	52	35	35	54	52	56	54	52
L6	16.5	17.5	6	16.5	17.5	6	16.5	17.5	20	6	6	19	17.5	20	5	5
L7	30	30	30	29	29	29	25	25	25	25	25	29	29	29	29	29
Gap	L8	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5
	L9	79	79	64	81	81	66	75	75	77	60	60	80	78	82	80

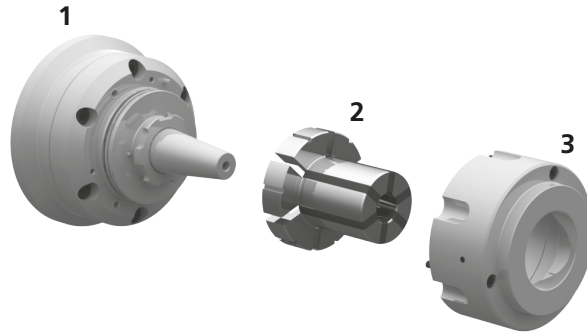
Technical data

Type		EM-S-1				EM-S-2				EM-S-3					EM-S-4					
Clamping range	S1	18-23	>23-35	18-23	>23-35	18-23	>23-35	30-55	30-55	30-55	45-80	45-80	45-80	45-80	45-80	70-105	70-105	70-105	70-105	70-105
Max. clamping length	S2	17.5	23	17.5	23	17.5	23	41.5	41.5	41.5	51.5	51.5	51.5	51.5	51.5	57.5	57.5	57.5	57.5	57.5
Min. clamping length	S3	7		7		7		8	8	8	8	8	8	8	8	8	8	8	8	8
Axial stroke	K	4		4		4		6	6	6	6	6	6	6	6	6	6	6	6	6
Expansibility in dia.		0.8		0.8		0.8		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Max. actuating force	kN	15		15		15		20	20	20	25	25	25	25	25	35	35	35	35	35
Max. speed	r.p.m.	5000		5000		5000		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Max. transmittable torque	Nm	50-90				105-190				195-350					395-595					
Rec. actuating cylinders		SIN-S 70				SIN-S 85				SIN-S 85					SIN-S 85					

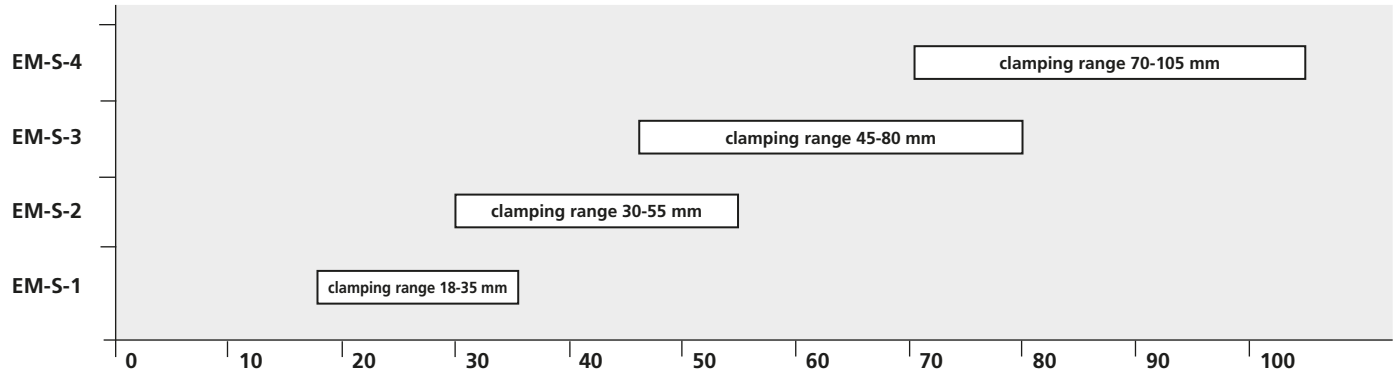
- Size 1 - 4
- Large expansibility

Technical design

1. Basic body EM-S with spindle adapter
2. Segment sleeve mandrel (case hardened + vulcanized) with bayonet quick change.
Clamping sleeves size EM-S-1 with three segments, clamping sleeves from size EM-S-2 on with six segments for better gripping force distribution
3. Workstop



Overview clamping ranges



Clamping sleeves

EM-S-1*

Ø	18	19	20	21	22	23	24	25	26	27	28	29	30
Id. No.	204716	203026	203027	203028	203029	203030	203031	203032	203033	203034	203035	203036	203037
Ø	31	32	33	34	35								
Id. No.	203038	203039	203040	203041	203042								

EM-S-2**

Ø	30	31	32	33	34	35	36	37	38	39	40	41	42
Id. No.	206313	203044	203045	203046	203047	203048	203049	203050	203051	203052	203053	203054	203055
Ø	43	44	45	46	47	48	49	50	51	52	53	54	55
Id. No.	203056	203057	203058	203059	203060	203061	203062	203063	203064	203065	203066	203067	203068

EM-S-3**

Ø	45	46	47	48	49	50	51	52	53	54	55	56	57
Id. No.	203069	203070	203071	203072	203073	203074	203075	203076	203077	203078	203079	203080	203081
Ø	58	59	60	61	62	63	64	65	66	67	68	69	70
Id. No.	203082	203083	203084	203085	203086	203087	203088	203089	203090	203091	203092	203093	203094
Ø	71	72	73	74	75	76	77	78	79	80			
Id. No.	203095	203096	203097	203098	203099	203100	203101	203102	203103	203104			

EM-S-4**

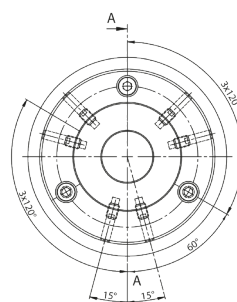
Ø	70	71	72	73	74	75	76	77	78	79	80	81	82
Id. No.	203434	203435	203436	203437	203438	203439	203440	203441	203442	203443	203444	203445	203446
Ø	83	84	85	86	87	88	89	90	91	92	93	94	95
Id. No.	203447	203448	203449	203450	203451	203452	203453	203454	203455	203456	203457	203458	203459
Ø	96	97	98	99	100	101	102	103	104	105			
Id. No.	203460	203461	203462	203463	203464	203465	203466	203467	203468	203469			

* The clamping sleeves have a max. radial expansibility in diameter of ± 0.4 mm from the nominal diameter.

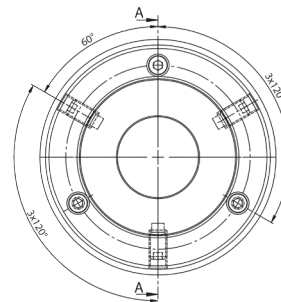
** The clamping sleeves have a max. radial expansibility in diameter of ± 0.6 mm from the nominal diameter.

Soft work stop blank

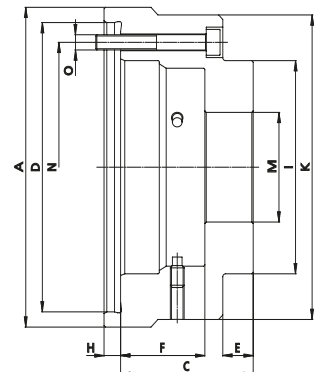
Type	EM-S-1	EM-S-2	EM-S-3	EM-S-4
Id. No.*	9100321	9100322	9100323	9100324
Id. No.**	5301416	5301417	5301418	5301419
A	93	105	113	142
C	47	59	75	82.5
D	80	95	88	115
E	12.5	22	27	30
F	27.5	30.5	40.5	45
H	6	6	-	-
I	50	70	88	116
K	82	100	114	143
M	19	31	46	71
N	66	82	100	128
O	M5	M5	M5	M5



EM-S-1



EM-S-2 / EM-S-3 / EM-S-4



* Soft, finish machined on mandrel side, pre machined on workpiece side.

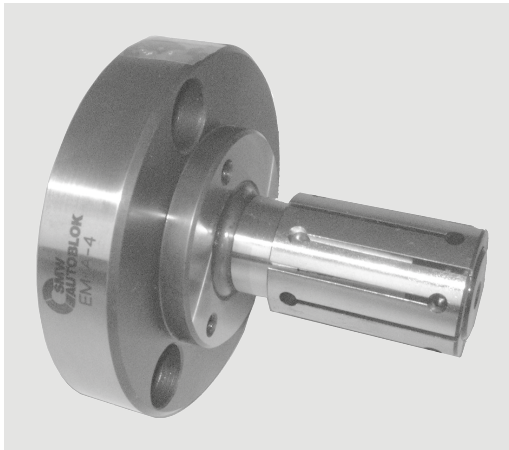
** Soft, with stock material (0.3 mm) for case hardening and grinding

EM-A / EM-AL

Expanding mandrel
Manual or power operated

Expanding mandrels Ø 14.7 - 129.7 mm

- Size 1 - 11
- Large expansibility
- EM-AL: body lengthened



Application/customer benefits

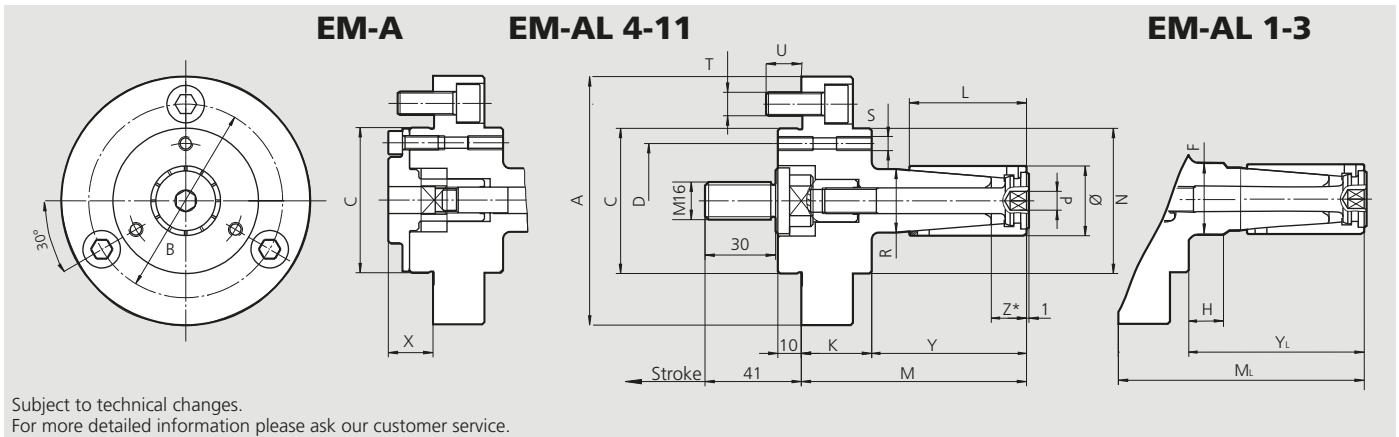
- For turning, milling, grinding and gear cutting operations
- High accuracy and torque transmission because of fixed arbor
- Axial pull down by axial movement of the clamping sleeve during actuation
- Quick set-up

Technical features

- Large expansibility 1-2 mm depending on size
- Hand or power operated
- Flange mounting
- Very rigid design
- Tapped holes at the front face to mount axial stops
- Clamping sleeves are also available in siliconized version
- EM-AL: clamping mandrel with extra long body

Standard equipment

Basic mandrel with draw bolt for power operation
Mounting bolts



Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type	EM-A-1 EM-AL-1	EM-A-2 EM-AL-2	EM-A-3 EM-AL-3	EM-A-4 EM-AL-4	EM-A-5 EM-AL-5	EM-A-6 EM-AL-6	EM-A-7 EM-AL-7	EM-A-8 EM-AL-8	EM-A-9 EM-AL-9	EM-A-10 EM-AL-10	EM-A-11 EM-AL-11
EM-A Id. No. (power operated)	68100110	68100210	68100310	68100410	68100510	68100610	68100710	68100810	68100910	68101010	68101110
EM-AL Id. No. (power operated)	68100111	68100211	68100311	68100411	68100511	68100611	68100711	68100811	68100911	68101011	68101111
A	106	106	106	106	106	106	130	130	130	130	130
B	82.6	82.6	82.6	82.6	82.6	82.6	104.8	104.8	104.8	104.8	104.8
C	g5 62	62	62	62	62	62	86	86	86	86	86
D	49	49	49	49	49	49	73	73	73	100	100
F	22	23	26	-	-	-	-	-	-	-	-
H	25	30	35	-	-	-	-	-	-	-	-
K	30	30	30	30	30	30	30	30	30	30	30
L	35	40	46	50	60	60	80	90	100	122	140
M	81	86	92	96	106	106	132	142	152	174	195
ML	106	116	127	136	146	146	182	188	222	248	275
N	62	62	62	62	62	62	86	86	86	-	-
Ø	mm 14.7-19.7	19.7-24.7	24.7-29.7	29.7-34.7	34.7-39.7	39.7-44.7	44.7-54.7	54.7-64.7	64.7-81.7	81.7-101.7	101.7-131.7
P	SW 4	4	6	8	8	8	8	10	10	10	10
R	h6 14	19	23	27	31.5	36	42	50	60	73	86
S	(3 x 120°) M6	M6	M6	M6	M6	M6	M6	M6	M6	M6	M6
T	(3 x 120°) M10	M10	M10	M10	M10	M10	M10	M10	M10	M10	M10
U	15	15	15	15	15	15	15	15	15	17	17
X	19	19	19	19	19	19	13	13	13	21	21
Y	51	56	62	66	76	76	102	112	122	144	165
YL	76	86	97	106	116	116	152	158	192	218	245
Z*	12.5	14.5	14.5	15	15.5	16	24	26	26.5	27.5	32
Manual kit EM-A	68110110	68110210	68110310	68110410	68110510	68110610	68110710	68110810	68110810	68111010	68111110
Manual kit EM-AL	68110111	68110211	68110311	68110411	68110511	68110611	68110711	68110811	68110811	68111011	68111111
Draw bolt power op. EM-A	68050110	68050210	68050310	68050410	68050510	68050610	68050710	68050710	68050710	68051010	68051110
Draw bolt power op. EM-AL	68050111	68050211	68050311	68050411	68050511	68050611	68050711	68050811	68050911	68051011	68051111

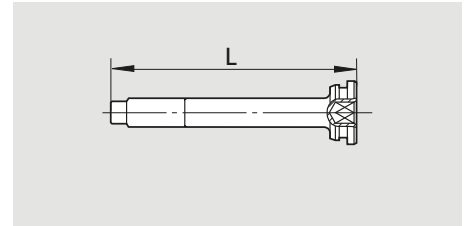
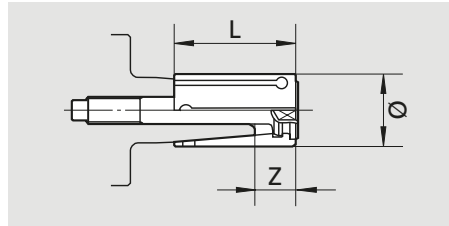
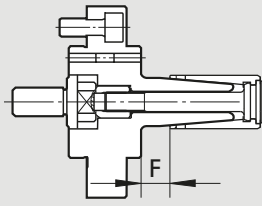
* Clamping on area Z only is not allowed.

Technical data

Stroke	mm	6	6	6	6	6	6	12	12	12	12	12
Max. actuating force	kN	7	7	12	12	15	20	20	20	25	25	30
Max. transm. torque	Nm	15	35	75	100	120	150	200	250	275	320	500
Actuating cylinder (rec.)		SIN-S 70	SIN-S 70	SIN-S 85	SIN-S 85	SIN-S 85	SIN-S 100	SIN-S 100	SIN-S100	SIN-S-100	SIN-S-100	SIN-S 125

All dimensions in unclamped position.

■ Ordering review



basic mandrel

type	Id. No.	F
EM-A-1	68100110	16
EM-AL-1	68100111	41
EM-A-2	68100210	16
EM-AL-2	68100211	46
EM-A-3	68100310	16
EM-AL-3	68100311	51
EM-A-4	68100410	16
EM-AL-4	68100411	56
EM-A-5	68100510	16
EM-AL-5	68100511	56
EM-A-6	68100610	16
EM-AL-6	68100611	56
EM-A-7	68100710	22
EM-AL-7	68100711	72
EM-A-8	68100810	22
EM-AL-8	68100811	68
EM-A-9	68100910	22
EM-AL-9	68100911	92
EM-A-10	68101010	22
EM-AL-10	68101011	96
EM-A-11	68101110	25
EM-AL-11	68101111	105

clamping sleeve cpl. with actuating screw

Id. No.	Ø	L	expansibility	Z
68300147	14.7	35	1	12.5
68300157	15.7	35	1	12.5
68300167	16.7	35	1	12.5
68300177	17.7	35	1	12.5
68300187	18.7	35	1	12.5
68300197	19.7	40	1	14.5
68300207	20.7	40	1	14.5
68300217	21.7	40	1	14.5
68300227	22.7	40	1	14.5
68300237	23.7	40	1	14.5
68300247	24.7	46	1	14.5
68300257	25.7	46	1	14.5
68300267	26.7	46	1	14.5
68300277	27.7	46	1	14.5
68300287	28.7	46	1	14.5
68300297	29.7	50	1	15
68300307	30.7	50	1	15
68300317	31.7	50	1	15
68300327	32.7	50	1	15
68300337	33.7	50	1	15
68300347	34.7	60	1	15.5
68300357	35.7	60	1	15.5
68300367	36.7	60	1	15.5
68300377	37.7	60	1	15.5
68300387	38.7	60	1	15.5
68300397	39.7	60	1	16
68300407	40.7	60	1	16
68300417	41.7	60	1	16
68300427	42.7	60	1	16
68300437	43.7	60	1	16
68300447	44.7	80	2	24
68300467	46.7	80	2	24
68300487	48.7	80	2	24
68300497	49.7	80	2	24
68300507	50.7	80	2	24
68300527	52.7	80	2	24
68300547	54.7	90	2	26
68300567	56.7	90	2	26
68300587	58.7	90	2	26
68300597	59.7	90	2	26
68300607	60.7	90	2	26
68300627	62.7	90	2	26
68300647	64.7	100	2	26.5
68300667	66.7	100	2	26.5
68300687	68.7	100	2	26.5
68300697	69.7	100	2	26.5
68300707	70.7	100	2	26.5
68300727	72.7	100	2	26.5
68300747	74.7	100	2	26.5
68300767	76.7	100	2	26.5
68300787	78.7	100	2	26.5
68300807	80.7	100	2	26.5
68300817	81.7	122	2	27.5
68300837	83.7	122	2	27.5
68300857	85.7	122	2	27.5
68300877	87.7	122	2	27.5
68300897	89.7	122	2	27.5
68300917	91.7	122	2	27.5
68300937	93.7	122	2	27.5
68300957	95.7	122	2	27.5
68300977	97.7	122	2	27.5
68300997	99.7	122	2	27.5
68301017	101.7	140	2	32
68301037	103.7	140	2	32
68301057	105.7	140	2	32
68301077	107.7	140	2	32
68301097	109.7	140	2	32
68301117	111.7	140	2	32
68301137	113.7	140	2	32
68301157	115.7	140	2	32
68301177	117.7	140	2	32
68301197	119.7	140	2	32
68301217	121.7	140	2	32
68301237	123.7	140	2	32
68301257	125.7	140	2	32
68301277	127.7	140	2	32
68301297	129.7	140	2	32

actuating screw

Id. No.	L
68030110	76.5
68030210	81
68030310	87.5
68030410	93
68030510	103
68030610	103
68030710	117
68030810	127
68030910	137
68031010	165
68031110	183

EM-B

Expanding mandrel
Manual or power operated

Expanding mandrels Ø 16 - 129.5 mm

- Size 0 - 4
- Large expansibility



Application/customer benefits

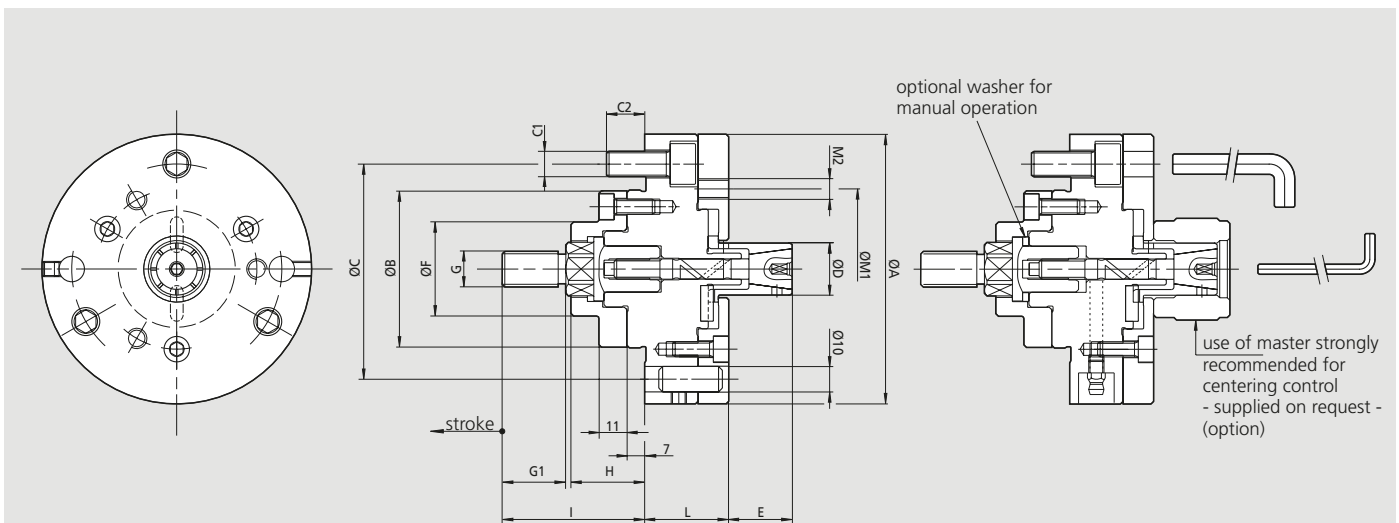
- For turning, milling, grinding and gear cutting operations
- High flexibility by means of modular system
- High torque transmission and concentricity
- No axial movement of clamping sleeve during operation
- Clamping of very short workpieces on the front section of the sleeve possible

Technical features

- Large expansibility up to 1.5 mm in diameter
- Hand or power operated
- Flange mounting
- Very rigid design
- Tapped holes at the front face to mount axial stops
- Clamping sleeves are also available in siliconized version

Standard equipment

Basic mandrel with draw bolt for power operation
Mounting bolts



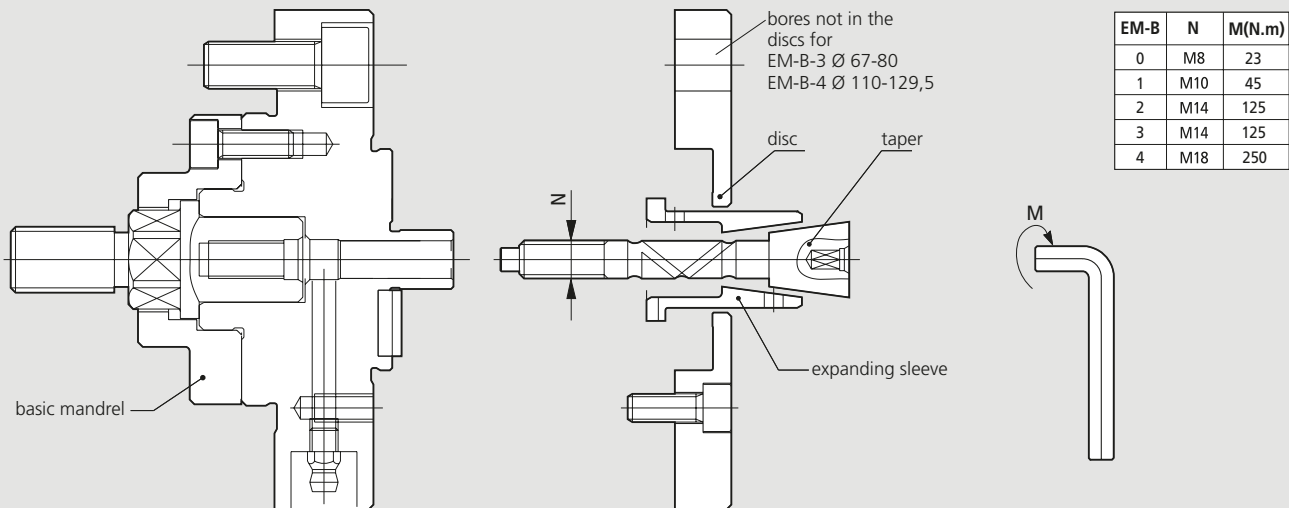
Subject to technical changes.
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type		EM-B 0	EM-B 1	EM-B 2	EM-B 3	EM-B 4
A	mm	106	106	106	125	180
B g5	mm	62	62	62	62	86
C	mm	82.6	82.6	82.6	82.6	133.4
C1	mm	3 x M10	3 x M10	3 x M10	3 x M10	3 x M12
C2	mm	16	16	16	16	15
D	mm	16-25.5	20-40.5	35-60.5	55-81	80-131
E	mm	23	28	43	58	85
F	mm	37	37	37	37	55
G	mm	M16	M16	M16	M16	M16
G1	mm	25	25	25	25	25
H	mm	29	29	29	29	36
I	mm	56	56	56	56	62
L	mm	35	37	37	37	50
M1	mm	63	68	85	104	162
M2	mm	3 x M8	3 x M8	3 x M8	6 x M8	6 x M8
N	mm	M8	M10	M14	M14	M18

Technical data

SMW-AUTOBLOK Type		EM-B 0	EM-B 1	EM-B 2	EM-B 3	EM-B 4
Axial stroke	mm	2.5	2.5	2.5	5	6.5
Sleeve expansion on Ø	mm	0.5	0.5	0.5	1	1.5
Max. axial force	kN	7	12	20	20	25
Recommended actuating cylinders	CSN	150	200	200	200	250
	SIN-S	70	70	85	85	100

Ordering review



EM-B	N	M(N.m)
0	M8	23
1	M10	45
2	M14	125
3	M14	125
4	M18	250

Subject to technical changes.
For more detailed information please ask our customer service.

EM-B-0				EM-B-1				EM-B-2				EM-B-3				EM-B-4			
basic mandrel expanding sleeve Ø D16-Ø D25				basic mandrel expanding sleeve Ø D20-Ø D40				basic mandrel expanding sleeve Ø D35-Ø D60				basic mandrel expanding sleeve Ø D55-Ø D80				basic mandrel expanding sleeve Ø D80-Ø D129.5			
taper	68020120			taper	68021120			taper	68022120			taper	68023120			taper	68024120		
disc	68040121	68040221	68040321	disc	68041121	68041221	68041321	disc	68042121	68042221		disc	68043121	68043221		disc	68044121	68044221	
D16	68200160			D20	68210200			D35	68220350			D55	68230550			D80	68240800		
D16.5	68200165			D20.5	68210205			D35.5	68220355			D56	68230560			D81.5	68240815		
D17	68200170			D21	68210210			D36	68220360			D57	68230570			D83	68240830		
D17.5		68200175		D21.5		68210215		D36.5	68220365			D58		68230580		D84.5	68240845		
D18		68200180		D22		68210220		D37	68220370			D59		68230590		D86		68240860	
D18.5		68200185		D22.5		68210225		D37.5		68220375		D60		68230600		D87.5		68240875	
D19			68200190	D23		68210230		D38		68220380						D89		68240890	
D19.5			68200195	D23.5		68210235		D38.5		68220385						D90.5		68240905	
D20			68200200	D24			68210240	D39		68220390									
				D24.5			68210245	D39.5		68220395									
				D25			68210250	D40		68220400									
taper	68020220			taper	68021220			taper	68022220			taper	68023220			taper	68024220		
disc	68040421	68040521	68040621	disc	68041421	68041521	68041621	disc	68042321	68042421	68042521	disc	68043321	68043421	68043521	disc	68044321	68044421	
D20.5	68200205			D25.5	68210255			D40.5	68220405			D61	68230610			D92	68240920		
D21	68200210			D26	68210260			D41	68220410			D62	68230620			D93.5	68240935		
D21.5	68200215			D26.5	68210265			D41.5	68220415			D63	68230630			D95	68240950		
D22		68200220		D27	68210270			D42	68220420			D64		68230640		D96.5	68240965		
D22.5		68200225		D27.5	68210275			D42.5	68220425			D65		68230650		D98		68240980	
D23		68200230		D28	68210280			D43	68220430			D66		68230660		D99.5		68240995	
D23.5			68200235	D28.5		68210285		D43.5		68220435		D67			68230670	D101		68241010	
D24			68200240	D29		68210290		D44		68220440		D68			68230680	D102.5		68241025	
D24.5			68200245	D29.5		68210295		D44.5		68220445		D69			68230690				
D25			68200250	D30		68210300		D45		68220450		D70			68230700				
				D30.5		68210305		D45.5		68220455									
				D31		68210310		D46		68220460									
				D31.5			68210315	D46.5			68220465								
				D32			68210320	D47			68220470								
				D32.5			68210325	D47.5			68220475								
				D33			68210330	D48			68220480								
				D33.5			68210335	D48.5			68220485								
				D34			68210340	D49			68220490								
				D34.5			68210345	D49.5			68220495								
				D35			68210350	D50			68220500								
				taper	68021320			taper	68022320										
				disc	68041721	68041821		disc	68042621	68042721	68042821								
				D35.5	68210355			D50.5	68220505										
				D36	68210360			D51	68220510										
				D36.5	68210365			D51.5	68220515										
				D37	68210370			D52	68220520										
				D37.5	68210375			D52.5	68220525										
				D38	68210380			D53	68220530										
				D38.5		68210385		D53.5		68220535									
				D39		68210390		D54		68220540									
				D39.5		68210395		D54.5		68220545									
				D40		68210400		D55		68220550									
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								D56.5		68220565									
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								D57.5		68220575									
								D58		68220580									
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Ordering example:

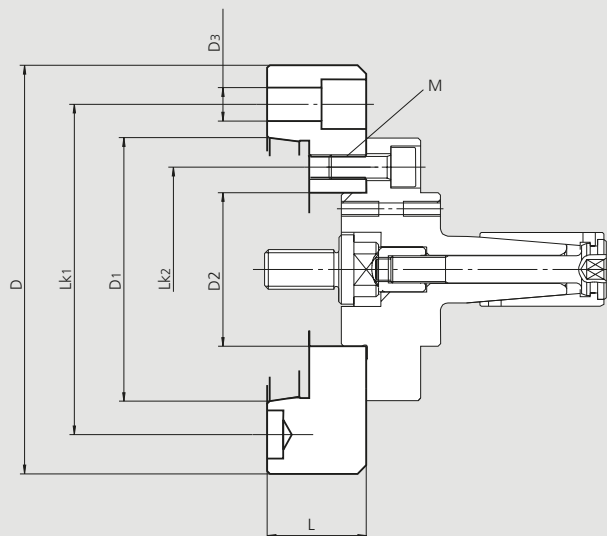
component ID = Ø 30
 basic mandrel EM-B-1 Id. No. 68101021
 expanding sleeve AD = Ø 30 Id. No. 68210300
 taper Id. No. 68021220
 disc Id. No. 68041521

Adapters

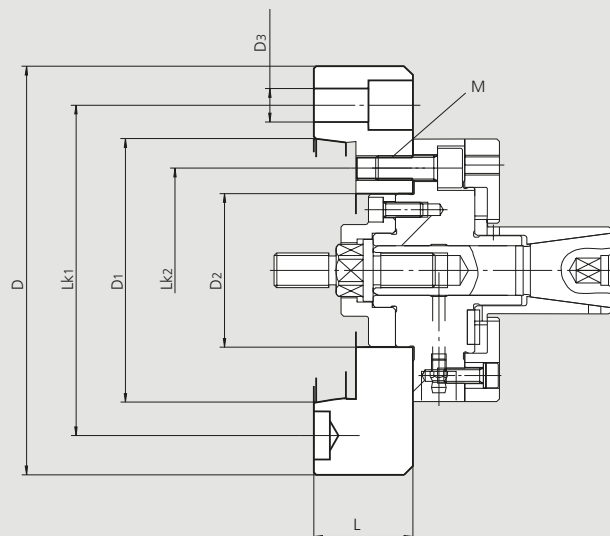
ISO-A for expanding mandrels

- Mandrels EM-A and EM-B have cylindrical mounting
- Adapters for DIN 55026 / ISO-A 702/1 spindle noses

EM-A



EM-B



Subject to technical changes.
For more detailed information please ask our customer service.

Technical data

adapter flange Id. No.		spindle nose ISO	D	D1	D2	D3	LK1	LK2	L	M
24150100	mm	A5	127	82.563	62H6	12	104.8	82.6	40	3 x M10
24150400	mm	A5	135	82.563	86H6	12	104.8	104.8	40	3 x M10
24160100	mm	A6	165	106.375	62H6	13.5	133.4	82.6	40	3 x M10
24160400	mm	A6	165	106.375	86H6	13.5	133.4	104.8	40	3 x M10
24180100	mm	A8	210	139.719	62H6	17	171.4	82.6	40	3 x M10
24180400	mm	A8	210	139.719	86H6	17	171.4	104.8	40	3 x M10

appropriate adapter flanges	EM-A	EM-B
24150100 ISO-A5		
24160100 ISO-A6	1-2-3-4-5-6	0-1-2-3
24180100 ISO-A8		
24150400 ISO-A5		
24160400 ISO-A6	7-8-9-10-11	4
24180400 ISO-A8		

Notes

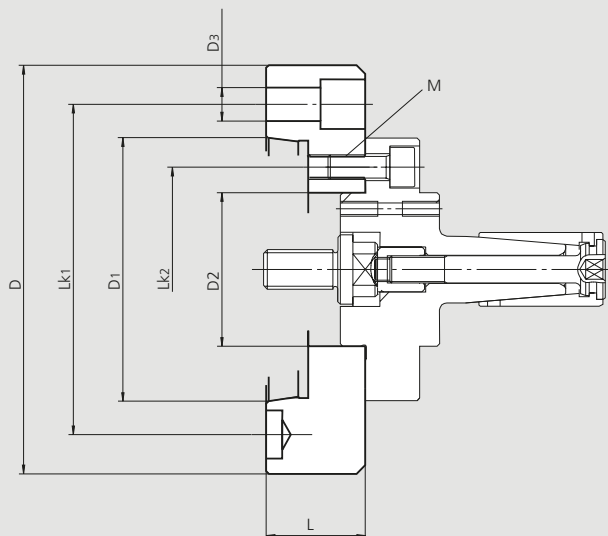
A large area of horizontal stripes in two shades of blue, intended for writing notes. The stripes alternate between a medium blue and a light blue color.

Adapters

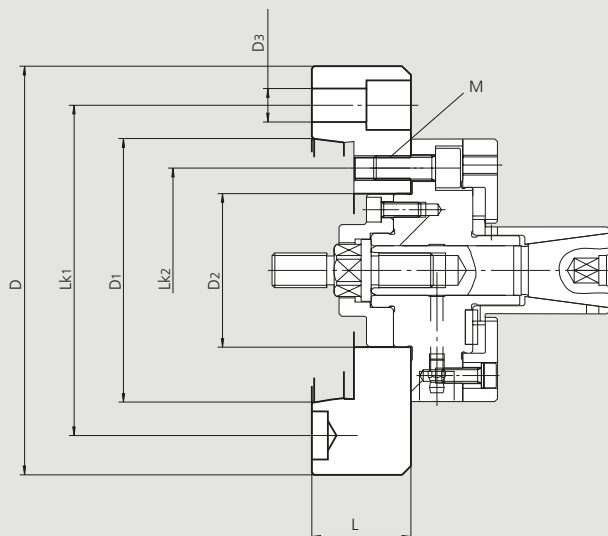
ISO-A for expanding mandrels

- Mandrels EM-A and EM-B have cylindrical mounting
- Adapters for DIN 55026 / ISO-A 702/1 spindle noses

EM-A



EM-B



Subject to technical changes.
For more detailed information please ask our customer service.

Technical data

adapter flange Id. No.		spindle nose ISO	D	D1	D2	D3	LK1	LK2	L	M
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24160100	mm	A6	165	106.375	62H6	13.5	133.4	82.6	40	3 x M10
24160400	mm	A6	165	106.375	86H6	13.5	133.4	104.8	40	3 x M10
24180100	mm	A8	210	139.719	62H6	17	171.4	82.6	40	3 x M10
24180400	mm	A8	210	139.719	86H6	17	171.4	104.8	40	3 x M10

appropriate adapter flanges	EM-A	EM-B
24150100 ISO-A5		
24160100 ISO-A6	1-2-3-4-5-6	0-1-2-3
24180100 ISO-A8		
24150400 ISO-A5		
24160400 ISO-A6	7-8-9-10-11	4
24180400 ISO-A8		

Notes

A large rectangular area filled with horizontal stripes. The stripes alternate between a medium blue and a light blue color, creating a grid-like pattern for writing notes.

SMW-AUTOBLOK

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- ▶ **Training**
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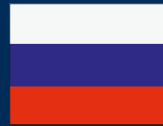
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